Modern Materials In Heating–Cooling . . . Next Week

AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

October 23, 1961

Issued every Monday at 450 West Fort St., Detroit 26, Michigan
Established 1926

Member, Associated Business Publications — Member, Audit Bureau of Circulations

Vol. 94, No. 8, Serial No. 1,700

Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.

Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.

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Vilter Sells Stock To Public, Employes

MILWAUKEE — All of the common stock of the Vilter Mfg. Corp., manufacturer of industrial refrigeration and air conditioning equipment, has been sold to employes and the general public in a move which changed the company's corporate structure from a non-stock corporation owned by a foundation.

Of the 60,000 share offering, 30,000 had been reserved for employes of the firm who are Wisconsin residents, in the form of trust certificates. Employes

(Continued on Page 4, Col. 5)

Airtemp Shows '62 Lines to Distributors

Residential System Shipped Pre-Charged

MIAMI, Fla. — A residential air conditioning system (model 1254) pre-assembled and charged with refrigerant at the factory is one of several new packaged cooling and heating products introduced recently to Chrysler Airtemp distributors at the 1962 national sales conference.

It was also announced that Chrysler Corp. has entered the electric furnace business with two models utilizing ductwork and designed for residential and small commercial installations. The model 4933 has a 33,000 Btu capacity and the model 4966 distributes 66,000 Btuh.

Other new product innovations include:

1. A "revolutionary" protector against compressor motor overheating, called a "deep probe motor guard."

2. A whole-house air conditioner said to cost "just slightly more than the ordinary room air conditioner." This model 1140 is described as a 33,000 Btu unit capable of air conditioning up to 2,500 sq ft.

3. A packaged heat pump (model 3103) tailored to southern climatic requirements.

4. A fan coil unit (model 1456) said to be exceptionally versatile.

(Continued on Page 21, Col. 1)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

To Be Human Is to Err

A shot resounded in a criminal law seminar . . . a student fell to the floor. Abruptly, the professor asked his class to write a straight-forward account of the incident—which had been pre-arranged.

Almost every report was incomplete, incorrect, and often amazingly inaccurate.

Again: a witness at a criminal trial boasted that he had an unfailing memory for faces. He gave positive identification of the culprit—although he'd caught only a fleeting glance of her at the scene of the crime.

Counsel for the defense asked the witness to look at a group of persons in the courtroom and point out those he'd seen testify the day before. His response was so pitifully wrong that the judge threw out the case.

Human "memory" has a habit of playing tricks on us.

Mechanical Memory Aids

Man has mistrusted his natural memory since primitive times, and has tried to improve it with devices and systems as varied as their random untrustworthiness.

Everybody remembers those verses, "in 1492 Columbus sailed the ocean blue" and "thirty days hath September." Way back in grammar school, they helped us remember dates in history classes.

These rhymes come under the

(Continued on Page 9, Col. 1)

Whirlpool Boosts Prices 3-5%

BENTON HARBOR, Mich.— Whirlpool Corp. announced that factory prices will increase 3 to 5% on its 1962 air conditioners and other home appliances.

Elisha Gray II, chairman of the board, said the increases will mark the first reversal of a downward spiral which has lasted for several years.

ARI To Consider Training Program At Nov. Meeting

HOT SPRINGS, Va. — A recommendation that the Air-Conditioning & Refrigeration Institute sponsor a training program for industry service and maintenance personnel is among items on the agenda for ARI's annual meeting and auxiliary sessions to be held here Nov. 12-15.

Major decisions affecting the institute will be made by the membership, board of directors, product sections, and committees.

For the first time in several years, the meeting program will include talks of general interest in addition to the usual business sessions.

Business matters up for action include establishment of ARI's operating budget for 1962.

(Continued on Page 4, Col. 2)

ASHRAE Officers See Bright Future For Society

By Frank J. Versagi

COLUMBUS, Ohio—"The Society can't be everything to all people, but it can be a lot of things to a lot of people. We have had problems; we shall have some in the future; but the sun is shining, things are brightening."

Such were the comments of John H. Fox, first vice president of the American Society of Heating, Refrigerating & Air-Conditioning Engineers when he spoke to the annual meeting of ASHRAE's Region Five.

Earlier in the day, ASHRAE President John Everetts, Jr., warned that the society must remain alert and progressive if it is to maintain American leadership in the heating, refrigeration, and air conditioning fields.

"In such things as high temperature hot water, acoustic

(Continued on Page 2, Col. 1)

NCRSA Convention Explores Ways To Improve Profits

Legal Action on Direct Sales Seen Unlikely

LAS VEGAS, Nev. — Hitting hard on the theme "Profit—Our Obligation" the National Commercial Refrigerator Sales Assn. at its 15th annual convention explored several avenues to profit improvement. Included among these is a continuing effort to eliminate as far as possible direct sales by manufacturers.

However, the possibility that the NCRSA will seek to curb direct sales either through court action or the intervention of any Federal governmental agency, no longer seems likely at this time.

"We surveyed the possibility of filing a 'friendly' lawsuit with the cooperation of a manufacturer, to test the legality of direct sales," reported James Scatena, Scatena-York Co., San Francisco, in a summarization of the NCRSA board meeting and the general convention proceedings, at the close of the convention.

"However, our legal counsel reported that all current legal opinion is to the effect that direct sales are legal except when made to the ultimate consumer for the purpose of resale. Thus, we will concentrate our efforts on proving to manufacturers that direct sales benefit no one—and in fact may be more injurious to the consumer than anyone else."

Scatena also reported that the board had gone on record as requesting more sales and service educational helps and other forms of assistance in conducting daily operations from manufacturers, and will push a study on the average man hours required for the installation of various types of refrigerated fixtures.

Reporting on the activities of the Distributor - Manufacturer Joint Relations Committee, Ray L. Greene, vice president, Tyler Refrigeration Corp. and committee chairman, pointed out the committee's actions are limited to a discussion of certain areas of mutual concern, and a report is then made to the directors of both associations.

Discussed at recent meetings were current developments in buying activity by voluntary

(Continued on Back Page, Col. 1)

Tecumseh Opens Compressor Depot In Dallas

TECUMSEH, Mich. — Hal Kelso, service manager at Tecumseh Products Co., announced that Tecumseh has established a compressor depot at 8516 Directors Row in Dallas.

Kelso also pointed out that the Dallas depot is the forerunner of other depots strategically located across the country. The Dallas depot will be used as a guide for stock requirements, planning procedures, and handling methods. When it is operating satisfactorily the second depot will be set up in California. Later locations considered are Florida or Georgia and the Eastern Seaboard.

Letters have been mailed from Tecumseh to all air conditioning customers outlining this program and requesting a list of their dealers and distributors who will be authorized to use this service.

Kelso stated that the Dallas depot was established to provide Tecumseh manufacturing customers with faster replacements for both in and out-of-warranty Tecumseh compressors.

(Continued on Page 4, Col. 1)

ASHRAE In Transition

(A Conscience of the Industry Editorial by Frank J. Versagi)

There is a growing undercurrent of dissatisfaction in the provinces of the American Society of Heating, Refrigerating & Air-Conditioning Engineers. There is grumbling that the society is going in the wrong direction or, worse, that it doesn't know where it is going.

Such an evaluation is neither arbitrary nor academic; it mainfests itself in tangibles:

- The recent spirited fight over the Board's decision to dispose of ASHRAE's Cleveland research laboratory;
- Dropping attendance reported by many chapters because members become unhappy with the meetings offered by the merged society;

(Continued on Page 12, Col. 1)

Region 5 ASHRAE Meeting--

(Continued from Page 1)

studies, use of plastics, some countries are already ahead of us," Everetts said. "Especially in England, France, Sweden, and Germany, there is increasing emphasis upon research and education in these fields."

Everetts added that due to poor international communications among the many technical and scientific societies, there is much wasteful duplication of effort going on in research projects. Many of the projects being conducted by the heating and ventilation research association of London, for example, parallel projects being conducted in this country, according to the ASHRAE president.

The Engineers' Joint Council is calling a conference on the general subject of better communications among engineering and research groups, both in this country and abroad, with the intention of reducing parallel studies and duplication of effort.

Everetts and Fox spoke at the Region Five meeting, which most attendees agreed was one of the most dynamic and informative regional meetings ever held by the society.

Technical sessions, for example, were held on such diverse subjects as the "pros and cons of central, urban heating and cooling," odor removal in air purification, ions and comfort conditioning, electric home heating, integrated lighting and heating. Some 175 engineers and guests participated in the Region Five two-day conference.

While the arrangement of the technical sessions was patterned along the lines of a national ASHRAE meeting, the greater informality usually found at the regional and local level made for quite lively discussions with very frank comments coming both from speakers and from the audience.

One example: "The present body of knowledge about the effect of negative ions on people is insufficient to warrant the installation of negative ion generators in residences or structures." This outright evaluation was offered by R. A. Duffee, Battelle Memorial Institute, who objectively discussed the experimental studies and literature so far available on negative ions. Duffee's talk will be reported more fully in a future issue of the NEWS.

Another good natured exchange of opinion occurred between H. L. Barnebey, president of Barnebey-Cheney Co., and Ralph A. Gonzalez, director of national service, Chrysler Airtemp.

In his talk, Gonzalez described a Chrysler training center which is using 100% outside air to overcome problems due to heavy smoking in the classrooms. Barnebey suggested that smaller tonnage air conditioning could be used in such an installation if proper air cleaning methods were applied.

Gonzalez countered that, "You either spend your money for air conditioning, or you spend it for filtration and cleaning equipment." Barnebey rebutted that his company has studies which show the economic feasibility of recirculating and cleaning air.

Auto Cooling Forum To Be In Dallas Jan. 25

DALLAS—The eighth annual national forum on automotive air conditioning will be held at the Statler-Hilton here Jan. 25 and 26, 1962, according to D. A. Brown, president of the Automotive Air Conditioning Assn., Inc.

The forum will be sponsored by the manufacturing members of the association for: manufacturers of automotive air conditioning components, distributors, dealers, the automotive and air conditioning industries.

Program arrangements include the following topic areas: distribution methods, sales techniques, servicing, dealer training, warranty, component and system design, according to the announcement.

Lively Discussion On Electric Heat

C. L. Stanford, president of Electriliving Corp., Indianapolis, raised a lively discussion after his talk on electric heat in which he made such statements as:

"A heat pump is one of the few items sold with guaranteed engineered obsolescence built in.

"Power suppliers who tolerate any heat factors over 0.25 kwh per degree day per thousand cubic feet are endorsing a disservice to their customers and a disservice to the electric heating industry.

"Over-eager power supply or sales personnel frequently contact 10 so-called electric heating dealers and the several insulating companies in each community, regardless of any showing or assurance of capable performance.

"Mass insulators and many insulation manufacturers have no conception of the degree of accuracy and effectiveness needed for electrically heated homes."

Richard Trout, Barnebey-Cheney Co., discussing odor removal in air purification, stated that revision of Chicago's ventilation code has been obtained. The former 40% outside air requirement for ventilation has been reduced to 15% outside air when adequate purification facilities are involved.

Reviewing the facts that oxygen content of the atmosphere is 21%, and that "the body can't tell anything is wrong with the air until the oxygen is reduced to 15%," Trout insisted that tests conducted in all types of buildings — using outside air completely, recirculated air completely, and a mixture of these, never revealed any oxygen content lower than 20.3%.

Water Treatment

Discussing water treatment as it applies to boilers, R. Greenwald, Allied Industrial Service Corp., Toledo, stressed that a fundamental knowledge of pH is critical for operators. "We sometimes assume that everyone knows that a neutral substance has a pH of 7 and that as the pH number goes up, the material is more alkaline, as the pH number drops below 7, the material is more acid.

"Unfortunately," Greenwald said, "we too frequently find operators who think they are reducing the acidity when they lower the pH."

Future issues of the NEWS will carry detailed reports on several of the papers presented during the technical conference.

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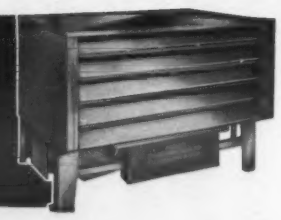

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$10 Million Centralized Air Conditioning System To Serve 5-Bldg. Cultural Center

NEW YORK CITY—An unusual centralized $10,000,000 air conditioning system to serve the 14-acre five-building Lincoln Center for the Performing Arts was revealed with the announcement of a contract award for basic refrigerating equipment.

Carrier Air Conditioning Co. will build four centrifugal refrigerating machines to supply cooling for the huge system. Russell Gray, Carrier president, said the four machines will be installed in a power plant located beneath the central plaza of the center and will have a combined capacity of 6,400 tons.

The Carrier executive pointed out that the Lincoln Center system will differ from most multi-building installations in that all water chilling equipment for air conditioning will be located in one place. Chilled water will then be piped to air conditioning equipment in each building.

"The central plant approach eliminates the need to install chillers in each building and, in effect, is like air conditioning a city within a city," Gray said.

He said the central plant approach is similar to that recently adopted by the Hartford, Conn., Gas Co. which soon will become the first utility to supply cooling services to a large number of downtown commercial buildings in much the same manner as it now provides steam for heating. He added that a central plant system already is in operation at Idlewild Airport.

Officials of Lincoln Center pointed out that year-round control of temperature and humidity, particularly during the summer months, will permit the center to offer a 52-week program to an estimated annual audience of over 3,000,000 plus other hundreds of thousands of visitors.

Year-round operation of the concert, theatrical, and other facilities of the center has been a major consideration in financial as well as cultural planning of the $142,000,000 center.

Located on Manhattan's West Side, Lincoln Center will include a new Metropolitan Opera House, Philharmonic Hall, Juilliard School of Music, the New York State Theater, a Repertory Theater, and a Library-Museum of the Performing Arts.

Its first building, Philharmonic Hall, will open in the fall of 1962. The entire center will be completed in time for the 1964-65 World's Fair.

Designed by Syska & Hennessey, Inc. in collaboration with Lincoln Center architect Harrison & Abramovitz, the air conditioning system provides each building with its own controls to govern atmospheric conditions in different parts of the building so that cooling and heating can be provided as needed, Gray said.

Special engineering design and equipment will provide a near-soundless system of air distribution in the theaters, concert halls, and other facilities. Consolidated Edison steam will be the source of winter heat and will energize turbines which drive the refrigeration machines.

J. L. Murphy, Inc., mechanical contractor, is installing the central plant and the over-all contractor for the Lincoln Center project is Fuller, Turner, Walsh & Slattery.

Michigan Group Changes '62 Convention Date

DETROIT — Dates for the 1962 convention of the Michigan Heating & Air Conditioning Assn. have been changed to May 10 and 11, Jay Biddle, secretary, announced recently.

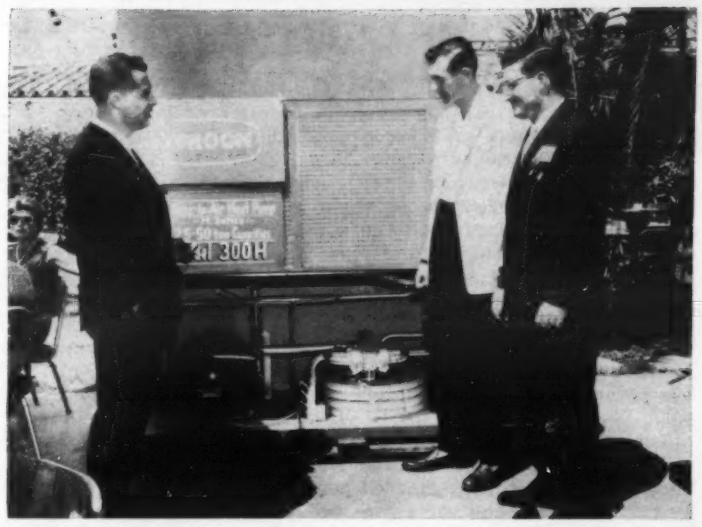
The convention will be staged in the new Capital Park hotel in Lansing, Mich.

California Revokes Licenses of 2 Firms

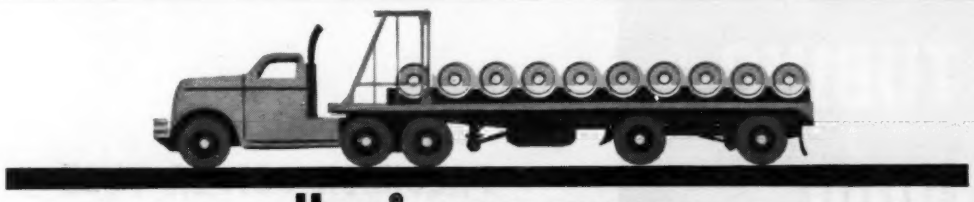
SACRAMENTO, Calif.—State licenses of two air conditioning contractors have been revoked by the Contractors State License Board effective Oct. 2.

Abandoning without legal excuse a project which had been undertaken, and failing in a material respect to complete the construction project for the price stated in the contract, resulted in revocation of the C 20 air conditioning and Supplemental C 43 sheet metal licenses of Fullerton Sheet Metal, Inc., Fullerton, Calif., according to the board.

The board indicated that the C 20 air conditioning license of Martin Elliot Grant, 19605 Mobile, Reseda, Calif., was revoked because of his knowledge of a violation, and his responsibility as a qualifying person.



DISTRIBUTORS examining the new product offerings on display at the St. Petersburg showing were particularly enthusiastic over the heat pump prospects ahead in 1962. Roland Pillat, left, product manager, Typhoon Heat Pump Div., explains the performance features of the model 300 H water-to-air heat pump. The single 20-hp compressor package has a heating capacity of 303,000 Btuh.



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Tecumseh--

(Continued from Page 1, Col. 5)

Additionally, he said, Tecumseh customers will be assured of obtaining for service requirements, compressors which have been built by factory methods and processes. They will be identical to the types currently purchased by the customer.

The depot will further reduce transportation costs since freight between Tecumseh or Marion and Dallas will be borne by Tecumseh, it was pointed out.

The Dallas depot will be under the supervision of the Tecumseh district office headed by Leo J. Freitas and will serve Texas, Louisiana, Oklahoma, and Arkansas. Initially, it will stock only air conditioning compressors but the service will be expanded to other Tecumseh equipment as soon as possible.

ARI Meeting--

(Continued from Page 1, Col. 3)

Under a recommendation of ARI's Executive Committee, the sum of $25,000 would be included in the budget to provide for preparation of material essential to the setting up of training programs in public school facilities in such cities as may become interested in establishing air conditioning and refrigeration training courses in their vocational departments.

This sum also would provide for possible addition of an ARI staff member whose duties would include contacting school officials, distribution of manuals and other materials, and general administration of the program.

The program would be based on experienced gained from a "pilot" course conducted during the past year in the Syracuse, N. Y., public schools under the direction of the ARI Training Committee.

Also on the ARI meeting agenda is a discussion of the "Delaware Residential Project" for the promotion of new air conditioned homes. ARI's Executive Committee has voted to make available assistance, in the form of printed material, charts, reports, and the "know how" developed at Wilmington, to utilities in other cities who may wish to sponsor similar projects.

At least six ARI product sections will meet during the annual meeting, and four others had scheduled meetings.

On Sunday, Nov. 12, there will be Executive Committee and board of directors meetings and election of officers in the morning, the annual golf tournament in the afternoon, and a social hour in the evening.

Monday's program calls for product section meetings all day, a luncheon at which M. H. (Bud) Stern, market manager, Lennox Industries, Inc., will talk on the place of heating in an air conditioning trade association, and a social hour in the evening followed by dinner.

Speaker at the dinner will be Donald I. Rogers, business and financial editor of *The New York Herald-Tribune.*

Annual ARI membership meeting will be held Tuesday morning. Following the business session there will be talks by George F. Taubeneck, publisher of AIR CONDITIONING, HEATING & REFRIGERATION NEWS, and Arthur S. Goldman, marketing research director of *House & Home.*

Tuesday luncheon speaker will be Maj. Gen. W. Austin Davis, commanding the Aeronautical Systems Div., Air Force Systems Command, USAF, at Wright-Patterson Base.

Vilter Stock

(Continued from Page 1, Col. 1)

also purchased a considerable part of the remaining 30,000 shares offered to the public, which offering was oversubscribed, reports A. A. Silverman, Vilter's president.

One of the oldest manufacturers in the field (formed in 1867) the firm became a non-stock corporation in 1945 when the Vilter family withdrew from the company and their stock holdings were cancelled and redeemed in exchange for the liquid assets of the company. Simultaneously with that transaction, the company was changed to a non-stock corporation whose purposes were then designed to be charitable in nature.

At that time (1945) the company was in a somewhat precarious financial condition, but under Silverman's leadership the company met all of its obligations and expanded its operations, particularly in the field of air conditioning, and for several years the company has had good sales and profits.

However, as Silverman relates it, the operation of a manufacturing business by a non-stock corporation is quite unusual, and gave rise to numerous questions by customers, suppliers, and the general public.

In April of this year, it was decided to separate the business operations from the charitable activities, and to commence and maintain a vigorous program of charitable, educational, and scientific activities. An arrangement was developed to separate the functions of the non-stock foundation from the operation of the business. The business operations, the business assets, and employes were transferred on May 1, 1961, to a new subsidiary, Vilter Mfg. Corp.

Like other typical incorporated businesses, Vilter issued stock for the assets it received. At the same time, the purposes of the foundation were amended so as to concentrate its activities solely on charitable, educational, and scientific activities, and its name was changed to Vilter Foundation, Inc. The foundation thereby became the sole owner of the stock of the new corporation.

After an extensive study, it was concluded that it would be desirable for the foundation to sell the common stock of the subsidiary, Vilter Mfg. Corp., in order to provide additional funds and income for charitable, educational, and scientific purposes, and to complete the separation and divestment of the foundation from the activities and operations of the corporation.

It was also concluded that the stock should be offered to Vilter employes and the general public. It was considered desirable for the Vilter employes to have a proprietary interest in the business, to serve as incentive and encourage greater productivity.

All employes who were residents of the state of Wisconsin were permitted to purchase stock in the 30,000 shares especially set aside for them in amounts based on a percentage of their total yearly remuneration. They could also buy additional shares in the public offering, which many of them did.

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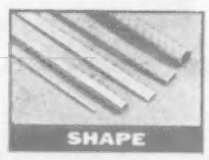

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Humble Oil To Market 'Magic Grid' Heat Booster, Developed To Provide Substantial Fuel Savings for Oil Heat Customers

NEW YORK CITY — A "Magic Grid" heat booster that is expected to provide substantial fuel savings for oil heat customers has been invented by Esso Research & Engineering Co. and will be marketed soon on the East Coast by Humble Oil & Refining Co.

TECHNICIAN at Esso Research Center, Linden, N. J., examines shape of an oil-burner flame following equipment modifications based on an Esso invention. Conventional high-pressure burners of the same type are used in more than 8½ million U. S. homes. The researchers found both in the laboratory and under actual operating conditions that a smaller, whiter flame will produce the same heat with lower oil consumption.

The Magic Grid is a metal grill designed to break up the fuel-air flow in conventional high pressure oil burners into swirls and currents that travel slowly enough to ignite the spray in the central region of the flame.

The grid was developed by Esso engineers after they discovered that conventional high pressure burners produce a flame shaped like a thick walled megaphone. In the hole in the middle no combustion occurs because the velocity of the air-fuel mixture exceeds the flame velocity.

The new grid creates areas of low velocity where flame can start. It then spreads throughout the entire central region of the conical flame.

The grid attaches to the burner nozzle and becomes an integral part of the end-cone assembly.

According to Humble, it improves burner efficiency in three important areas — quietness, cleanliness, and combustion efficiency.

Fuel consumption is reduced substantially. Air supply in the fuel-air mixture is greatly reduced, resulting in a whiter, hotter, more compact flame, burning throughout the flame pattern.

Field tests of the Magic Grid modifications showed stack temperatures reduced from an average of 600°F to 390°. Excess air was down from 90% to 37%. Efficiency rose from an average of 71% to 83%. Noise from flame pulsation and smoke in the stack gases were essentially eliminated.

The Esso Research invention was tested for a full heating season in 30 homes near here.

"Results were average savings of more than 20% in fuel bills," according to Humble. "Saving were as high as 43%. Lowest was 9%. Average was 21.2%. Dollar savings ranged from $19 to $119. Average savings were $53.50 per home.

"We could not have picked a more ideal time for the tests than the 1960-61 heating season," Humble officials declared. "Many temperatures were among the lowest in the last 80 years."

Humble announced plans to market the new development immediately in the company's Esso Standard eastern region which extends from New England through Virginia and West Virginia.

The grid, the company said, can be applied to all conventional high pressure burners, which include more than 85% of all oil burner installations.

The *Wall St. Journal* reported that installed cost for the device is $54.60—less $10 to those who have a Humble oil burner service contract. Humble justified this reduction because part of the work can be done with the normal service inspection.

Humble said that it feels so sure of the new invention that it offers to return the entire purchase price if the owner is not completely satisfied after 12 months' operation.

G-E Names Thompson

MORRISON, Ill.—Leonard D. Thompson has been named sales engineer for heating controls at General Electric's Appliance Control Dept. here, according to Robert F. Paling, the department's manager of heating control sales.

Thompson is responsible for sales of the department's line of controls for domestic warm air, hot water, and steam heating systems as well as controls for other special purpose applications. He was formerly a design engineer with G-E's Instrument Dept., Lynn, Mass.

All-Electric Project Has 400 Homes, 100 Apts.

LIMA, Ohio—An all-electric residential development to include 400 homes and 100 apartment units is now under construction here.

Called Sherwood Park, the $14 million development is located on Lima's northwest side. Builder Ben B. Cogan is erecting five model ranch homes in the $15,200 to $21,000 price range.

Each of the brick homes and apartments will be electrically heated with baseboard radiation. Each buyer, according to Cogan, will receive a guarantee of the operating costs and will be provided with monthly budget billing. Gold Medallion standards of the Ohio Power Co. will be met.

Air conditioning will be optional.

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Problem of Heavy Exhaust for Die Casting Solved by 3 Makeup Air Handling Units

ELMIRA, N. Y. — A makeup air system comprised of three gas-fired makeup air assemblies with a total capacity of 3,600,000 Btu has solved the problem created by an extensive exhaust system in the die casting department of the Remington Rand Div., Sperry Rand Corp., here.

Some 30,000 cubic feet per minute of contaminated air is exhausted through ducts connected to melting furnaces, grinding machines, and die casting machines in the plant.

The makeup air installation balances the exhaust system with tempered air in the wintertime, and one of the three Reznor units is used for heat alone when the exhaust system is not in operation.

In the summertime, when the building's doors usually remain open, the makeup air system's blowers also are used for continuous air circulation to assure a constant change of air.

Problem Recognized In Blueprint Stage

"We recognized our problem when the die casting department was in the blueprint stage," said Harold Beebe, Remington Rand's plant engineer. "We knew that a negative air pressure would be created in the building by the exhaust system in the wintertime and that, unless balanced, it would cause drafts and permit infiltration of dust and dirt through the smallest openings in the building structure."

Beebe and George Morrow, assistant plant engineer, surveyed the types of makeup air systems applicable to the job and decided that a gas-fired system would be the most economical to operate and maintain. They then consulted with representatives of Reznor Mfg. Co., Mercer, Pa., on the system's design.

A study of the proposed 7,500 sq ft die casting department where frame sections of typewriters, calculating machines, and other products are cast, disclosed that the building itself would have a heat loss of approximately one million Btu.

A 25,000 cfm blower also would exhaust fumes from two gas-fired melting furnaces with capacities of 500 lbs. per hour of aluminum alloy, and three aluminum die casting machines, each with its own 250-lb. holding furnace in which the molten alloy is held to the proper casting temperature.

In addition, a 5,000 cfm blower would exhaust dust-laden air from two sand blast machines which clean the castings, and a double-spindle snag grinder, two belt sanding machines, and a disc grinder used to finish the castings.

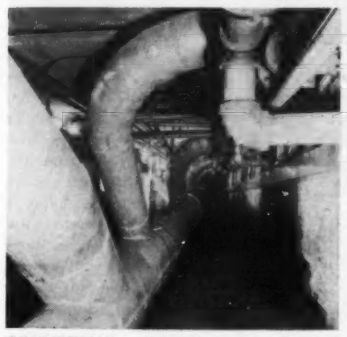
Three Makeup Air Units Hung from Ceiling

Reznor recommended installation of three makeup air units, each consisting of a 1,200,000 Btu gas-fired duct furnace assembly and a 10,000 cfm blower unit. The three assemblies are hung from angle iron hangers near the 30-ft high ceiling.

Capacities of the makeup air units are based on a minimum outside design temperature of -15°F. Outside air is pushed through the duct furnaces by the blowers, which operate continuously, discharging air tempered to 70°.

As outside temperatures moderate, sensing bulbs located in the discharge air plenum of each unit modulate the gas flame in the furnaces downward to maintain an even discharge air temperature. Modulation to within 20% of capacity of the duct furnaces is possible before the flame is extinguished.

Intake air ducts are extended from the makeup air units through the building's roof, bringing in outside air directly to the units. Stainless steel heat exchangers in the furnaces are designed to resist corrosion from internal condensation caused by the passing of incoming cold air through the furnaces. Motorized vent exhausters are used to vent the heaters directly through the roof.



CONNECTING ductwork runs through underground tunnel previously used for oil storage at Remington Rand plant. This permits overhead area to be kept clear for cranes and monorail used to transfer molten aluminum from melting furnaces to holding furnaces at each die casting machine.

THREE Reznor makeup air units installed in the 7,500-sq ft die casting department of the Remington Rand plant at Elmira, N. Y., balance the plant's extensive exhaust system with tempered air in the wintertime and provide continuous air circulation in the summer.

One of the three makeup air units is equipped with a "Y" branch and damper in its intake air duct to provide for re-circulation of air and performance by the unit of a normal heating function when the building's exhaust system is not in operation.

The other two Reznor units are equipped so that propane gas may be used as a standby fuel in the wintertime, should restrictions on use of natural gas be imposed during prolonged or severe cold spells.

"The makeup air system just

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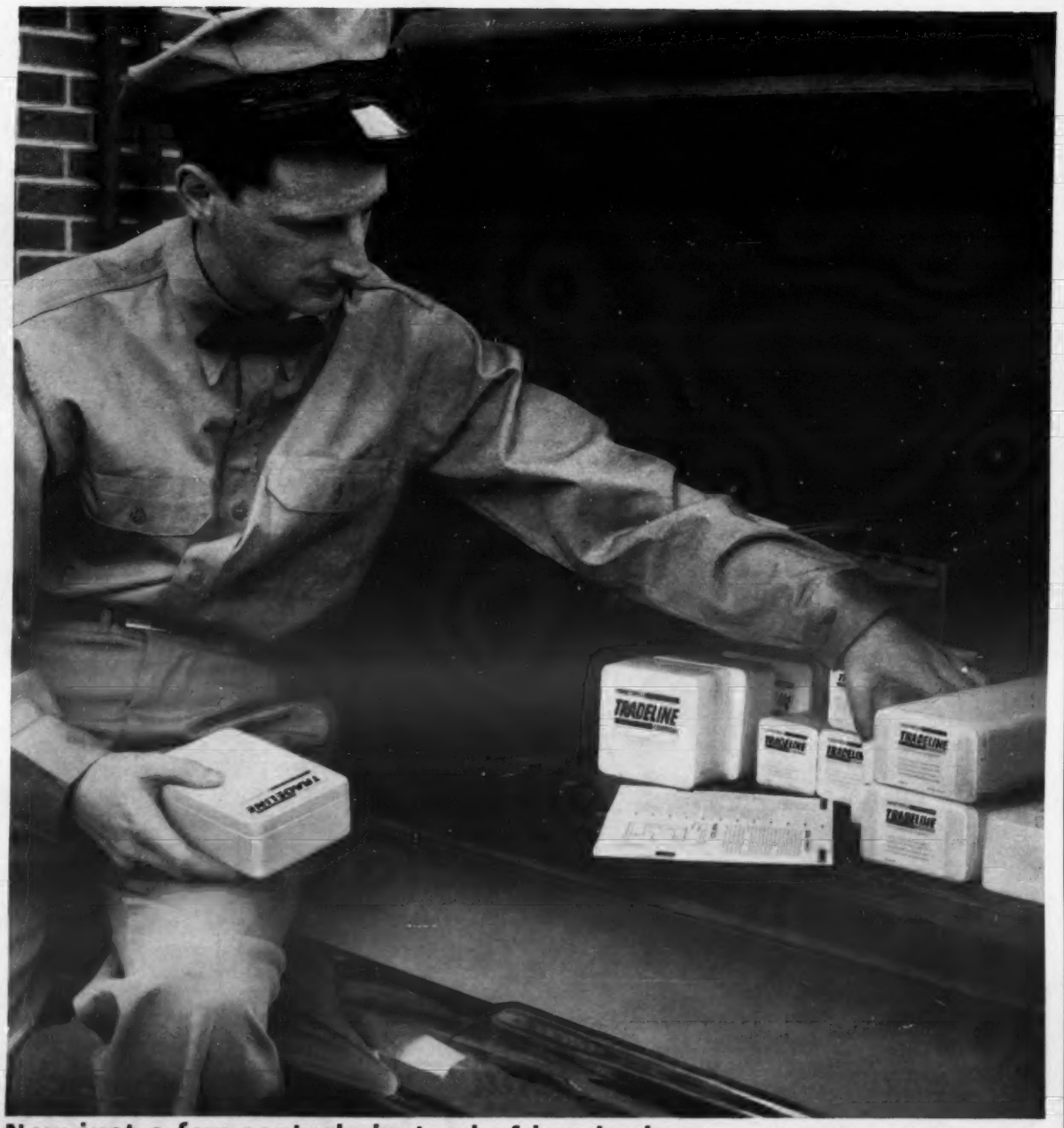

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completed its first full winter of operation, and performed very satisfactorily," Beebe said recently. "It provided a completely comfortable and healthful atmosphere for the employes."

The makeup air installation was made by Remington Rand's plant engineering division under the supervision of Morrow, who also designed and installed the exhaust system.

"The exhaust system is unique in that all connecting ductwork runs through an underground tunnel previously used for oil storage," Morrow said. "This allowed us to keep overhead areas clear for cranes and for a monorail which is used to transfer molten aluminum from the melting furnaces to the holding furnaces."

A. J. McAndrews, superintendent of die casting, said investment by Remington Rand in its own die casting department has paid off handsomely.

Ohio Valley Indoor Comfort Bureau Of Steubenville To Be Licensed Oct. 24

STEUBENVILLE, Ohio — Mark McElroy, attorney general for the state of Ohio, will be the principal speaker here on Tuesday night, Oct. 24, when the Ohio Valley Indoor Comfort Bureau of Steubenville is officially licensed.

An estimated 300 are expected to attend the banquet to be held in the ballroom of the Fort Steuben hotel. A welcoming address will be given by Samuel S. McCormick, Steubenville's mayor, who has proclaimed the week of Oct. 24 to 30 as "Silver Shield Week." Conferring the license will be the National Warm Air Heating & Air Conditioning Association.

This will be the third bureau to be formed in Ohio and the 18th in the nation. In addition, there are approximately 25 additional cities across the country that have Silver Shield Bureaus in various stages of formation.

Twenty heating men from the area who attended a special 12-week training course, held at Steubenville university, will receive certificates of eligibility.

Officers of the newly-formed bureau are: David Bert Sligar, Schenerlein & Sligar, president; Max Flinn, E. Flinn & Sons, vice president; Vernon Snyder, Donvernon Heating & Roofing Co., co-secretary; William Hawkins, Hawkins Heating & Air Conditioning Co., co-secretary; and Norman Locher, Robertson Supply Co., treasurer.

World Trade Corner

HARLAN GROSSHANS, export manager for Fedders Corp., is on a four-week tour of Fedders distribution and manufacturing facilities in Central and South America. Purpose: to introduce 1962 models, plan marketing programs for the coming year, and check on production of Fedders equipment.

Fedders air conditioners are distributed locally in Caracas and Maracaibo, Venezuela; Panama City, Panama; Managua, Nicaragua; and San Juan, Puerto Rico. The units are manufactured in Porto Allegre, Brazil, and Buenos Aires, Argentina, under licensing agreements. Fedders also has licensing agreements with manufacturing firms in Canada, Italy, and India.

THE WESTERN AUSTRALIAN Refrigeration & Air Conditioning Contractors' Assn. has appointed a new secretary, Mrs. Margaret Walsh of East Perth.

* * *

PAUL MUELLER CO., Springfield, Mo., recently displayed its newly-developed model "R" stainless steel bulk milk tank at the International Trade Fair in Poznan, Poland. The company has done some export business in Central and South America and Canada, and is presently exploring the possibility of entering the European market.

The company considers the model "R" tank, built especially for 10 to 20-cow herds, an "excellent entree" for this market. The tank has a galvanized exterior, but a stainless steel exterior is available at slightly higher cost. Features include stainless steel evaporator coil, simplified built-in controls and instruments, and two strainer inlets at the top outermost edge.

* * *

DON TITUS, president of Titus Mfg. Corp., Waterloo, Iowa, has announced the appointment of E. H. Price, Ltd., Winnipeg, Man., Can., as licensee to manufacture and sell Titus air distribution products in Canada.

The Price firm manufactures and distributes commercial and industrial heating and ventilating products. It has offices and warehousing facilities in the principal cities of western Canada. The Arthur S. Leitch Co. will continue to represent the Titus line in eastern Canada.

* * *

AIR-MAZE DIV., Rockwell-Standard Corp., Cleveland, recently shipped to Portugal a giant air filter it built for an ultra-modern office building under construction in Lisbon. The automatic unit, which filled seven crates, "will provide millions of cubic feet of clean air for ventilating purposes," the company said.

* * *

WESTINGHOUSE ELECTRIC International Co. recently sponsored the second international technical assistance conference at the Westinghouse plant in Columbus, Ohio. Some 50 officials from Westinghouse-licensee appliance manufacturers in 18 countries got a detailed picture from Westinghouse management on how the company builds and sells its consumer appliances.

At the same time, the visitors reported on developments of their own.

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Reader Comments on Cap Tube Articles

A few readers have taken exception to statements made by Henry Ehrens in his "How To Check Cap Tubes," Oct. 9 and 16. The NEWS here presents one experienced engineer's viewpoints.

With regard to the "How To Check Cap Tubes (1)" piece in the Oct. 9 issue, I imagine that you will get a few dissenting letters concerning the author's statements concerning the variation of a cap tube system's performance across ambients. Also, his reference to charging according to frost pattern is not in keeping with his earlier theme of using instruments to do the job accurately.

Properly Designed System

First of all, it has been my observation that the opposite effect takes place in a cap tube system as it operates across ambients. A properly designed system is one in which the cap tube is sized for the ambient expected in service most of the time and then is checked to be certain that operation is at least adequate during operation at the extreme design conditions in ambient.

For instance, in domestic refrigerators, it would be wise to size the tube to just liquid seal at about a 75°F ambient and then check operation by sight glass and temperature and pressure surveys for the 60 and 110° rooms. We would find that the system operates so as to build up liquid in the condenser in the lower ambients and that we are passing some vapor in the higher ambient.

In either case, however, the inherent self correcting action of a capillary tube to force the system to achieve a balanced flow rate acts to minimize the inefficiency. What happens is this:

In the lower ambients, the compressor's pumping rate is greater than the flow rate of the cap tube when the machine begins a cycle and liquid begins to pile up in the condenser. As this continues, the high-side pressure increases to force a greater flow through the cap tube and a condition of balance is achieved.

Conversely, in the high ambient, the cap tube will pass a greater flow of liquid than the compressor can deliver and some vapor is passed. The cap tube's flow capacity is less passing a mixture of liquid and vapor, and a new balance is achieved here.

Now the passing of vapor in the high ambient definitely represents a loss in system capacity and many people might argue for sizing the tube for the highest design ambient. This would mean, however, that greater energy (electrical) would be probably consumed under average usage than with a tube sized for some ambient less than max.

In any event, a properly designed system must adjust cap tube size along with high and low-side volume and refrigerant charge in order to provide acceptable operation across ambients.

One set correctly by the designer, tampering with any one of these variables can upset the whole system. It is impossible to change any one to a large degree without changing some of the others to compensate.

Accumulator at End of Evaporator Circuit Almost a Must

Also, the use of an accumulator at the end of the evaporator circuit is almost a must for any design using a cap tube. The function of the accumulator is to prevent carryover into the suction line with the attendant possibility of compressor valve damage and a certain capacity loss to the evaporator. As a machine cycles on and off the liquid level in the accumulator will vary: fullest during the off cycle, probably violently emptying as the machine cycles on, running dry for a while, and partially filling as the cycle continues.

In a properly designed system, the accumulator will not be dry for any extended period of time, even in low ambient operation with some of the liquid backed up in the condenser.

Another action not generally appreciated is that during any operation there is a significant amount of refrigerant dissolved in the compressor's oil charge and that this amount is increased as the oil temperature decreases. Thus, the evaporator is robbed in the lower ambient not only by the excess of liquid necessary in the condenser to force flow but by the added amount dissolved in the cooler compressor oil.

While it may be practical to consider charging a machine in the field by frost pattern, this is at best a crude approach. To do the job correctly implies extensive measurements and observations—electrical as well as temperature and pressure.

It would appear to me, however, that any system with an accumulator should be charged very slowly until a frost pattern reaches the accumulator and extends to the point of suction-cap tube heat exchange termination. You would have to be very careful in doing this though, since extra charge could be added past this amount with no visible effects due to the heating action of the cap tube on the suction line.

If this technique is used, and it is a cool day, the serviceman should realize that he may be overcharged when the warm weather hits. Conversely, if the operation is performed during the hot summer weather, he might find that he was undercharged for cool weather operation.

Happily, if the system was originally designed along conservative lines with a reasonably large charge tolerance (say an ounce and a half in a 10-oz. system), his problems are small with concern to charge. He might possibly be much more properly concerned with the possibility of moisture in the opened system, etc.

I don't normally write letters to editors, but after reading the material I felt compelled to try to set the record straight. I do not want you to publish this letter under my name, for business reasons, but hope that you will check with others to determine that the information given is incorrect as published and print some kind of a re-education program. Your paper is considered the bible by many in the field and performs a real disservice when erroneous information is published.

P.S.: Add on to the definition of "service *engineer*" that he is also a graduate of an accredited college of engineering. The other fellow he's talking about may be a damn good serviceman but he's not an engineer.

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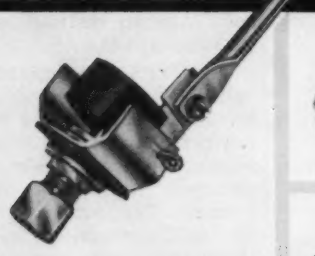

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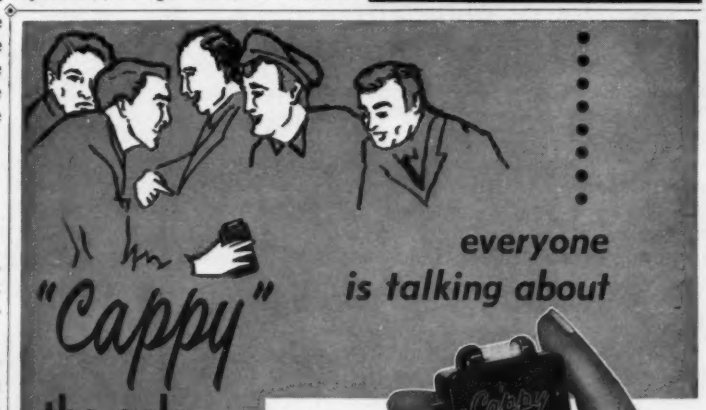

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Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

heading of mnemonics (nee-mon-ics)—the art of memory aids.

Impelling orators utilize an "architectural" mnemonic device—based on images, places, concentration, and repetition—to help them remember sonorous phrases.

Before celebrated Roman orator Cicero gave out with a speech he'd think of important and clever things he could say. Then he'd form images of these thoughts and place them in the room of an imaginary "house."

The more complex his speech, the more elaborate this "house." Idea-images were placed on the walls, floors, in windows, and doorways. He repeated this mental arrangement again and again to fix it in his mind.

When he spoke, he merely took a mental "stroll" through the rooms of that imaginary palace.

Memory Is Tractable

Although detailed mnemonic devices like these require considerable concentration, an average person can benefit from familiar written and printed words to aid his memory.

Thomas Murner, 16th century author of *Logica Memorativa*, was an early deviser of memory aid systems.

As a teacher of philosophy, striving to improve memory quotients in his students, he employed devices still used by educators today . . . flash cards and association.

His pupils were taught to associate dramatic illustrations on his cards with ideas to be recalled later, at will.

More recent advances in aiding "recall" are mechanical cataloging and indexing system. Probably the most famous of these is the national fingerprint file kept by the Federal Bureau of Investigation.

More than 125 million fingerprint cards had been indexed in FBI files last time figures were released, and nearly 20,000 new "signatures" pour in every working day. Any fingerprinted individual on the FBI list can be identified within five minutes.

Photographic and recording equipment also is used as memory joggers. All sorts of data now is condensed on films and tapes.

For instance, a visitor to almost any large public library can read back-date issues of newspaper and periodicals on microfilm quickly and readily.

Mechanical Brains

Most spectacular developments in the "assisted memory field" have occurred *via* the science of Cybernetics, which has spawned so-called "memory machines."

For years, bad weather conditions and overloaded circuits impeded the radio transmission of vital defense data, weather information, and similar graphic material.

Messages would be held up while passing from outpost to outpost—until the development of the following-described "electronic brain."

Part of a world-wide effort to improve global communications, the Crosby "brain" stores graphic material until transmitting conditions improve — then transfers it to a cooperating radio sending station.

When the message reaches its final destination, the receiving device transposes it into a visual image, ready for immediate use.

Most persons need some sort of system to aid their ability to "recall" names and faces. Few businesses could survive on the memory of man alone.

Yet, every once in a while, a "memory prodigy" arises — whose powers are studied with awe.

The rest of us will hallelujah the arrival of pocket-size Electronic Brains to help us remember names of people we see once a year at huge conventions and industry expositions.

Stories of the Week

"Have you any abnormal children in your class?" a harassed sixth-grade teacher was asked.

"Yes," she sighed. "Two of them have good manners."

George M. Cohan was a perennial meal-ticket for a great many show-biz folk who weren't working.

Some of these "pensioners" visited him regularly to receive George's Personal Social Security Operation checks.

One such disappeared for several weeks. Next time Cohan saw him the latter was smartly attired, barbered, manicured, and scented.

"Joe, you look great," beamed Cohan. "Did a relative remember you in his will?"

The actor acted unfriendly-like.

"What is this, George," he suspicioused, "a touch?"

Unruly delegates made such a frightful racket at the beginning of the 1912 Rump Republican (Bull Moose) national convention that Chairman Beveridge of Indiana gave up his gavel.

In a foghorn voice, heard throughout a suddenly and unexpectedly stilled auditorium, he roared:

"Where is that So-and-so preacher? We need his (profanity) prayer and (obscenity) presence to calm these (fatherless) down."

Even in the 1924 Democratic national convention northern and southern delegations split apart emotionally.

When physical violence erupted, leader of the brass band (hoping to distract tempers) compounded the felony. He downbeated:

"Marching through Georgia."

Quo Vadis

Sign on the back of a Volkswagen:

"Don't honk at me. I'm pedalling fast as I can."

Lead from strength, discard from weakness, is the formula that wins the game of life.—*Spotlight*.

Verse of the Week

Better take time out, or it'll take you;
And once you're counted out, brother, you're through.
So from here on in, you'd better plan
To happily live as a friend to man.—DR. CARL C. BYERS.

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Detroit Panel Informs Public on Various Types of Heating and Cooling Systems

By George M. Hanning

BIRMINGHAM, Mich. — "Comfort in the home is that condition where the occupant is not aware of either heat or cold," Ed Root, Detroit consulting engineer, declared during a panel discussion on heating and cooling staged here by the Detroit area chapter of the Home Improvement Council.

It is the air conditioning engineer's job to design an air distribution system such that the temperature of the air entering the room is not objectionable and so that the air stream will not hit the occupants.

Panelists agreed with Root when he contended that the word air conditioning is a misnomer when it is considered to apply to cooling only. In this area, he indicated, air conditioning is 80% heating and only 20% cooling in terms of the use of the equipment. He suggested use of summer and winter air conditioning to cover both.

Purpose of the panel discussion was to inform the buying public of the various types of heating and cooling available with particular reference to the home improvement market.

Moderator of the program was Richard Goodwin, a local heating and cooling contractor and a director of the newly-formed Detroit Home Improvement Council. Assisting him and getting the talks down on tape for future use was C. G. Bunting, HIC secretary.

Sees Question Evaded

George Asher, secretary of the Better Heating & Cooling Bureau of Detroit, declared that the fault of the heating industry lies in evading the question of what comprises a heating system.

A heating system, he said, is more than a type of fuel or a source of heat. The air distribution system is what gives the homeowner indoor comfort. No piece of equipment will give comfort unless installed right.

He pointed out that contractor members of the bureau are pledged to make all their installations in accordance with standards adopted by the bureau to assure the homeowner of a comfortable home.

He indicated that the bureau is holding discussions with the National Warm Air Heating & Air Conditioning Assn. with a view to joining Silver Shield.

Gil Ham, executive director of the Hydronic Heating - Cooling Council of Detroit, agreed with Asher on the importance of good installation. He noted that in the hydronics heating industry, the big problems are the misapplication of equipment and "sometimes" poor installations.

After showing slides on progress made in modern hydronics heating, he pointed out that hydronics is particularly adaptable to the home improvement market because of the ease of getting into inaccessible areas.

"We can get into inaccessible areas by drilling 1 to 1¼-in. riser holes without cutting or tearing out walls in use. By running separate sets of pipes we can zone areas and thermostatically hold them at different temperatures, if desired."

He pointed out that hydronics heating also is adaptable to snow melting systems for clearing sidewalks and driveways.

Cooling Aspects

M. R. Martin, assistant chief engineer of the Air-Conditioning & Refrigeration Institute, covered the cooling aspects of air conditioning. He asserted one in 18 homes started this year will be centrally air conditioned.

He described the three types of home air conditioning—room units, central ducted system, and water chiller connected with fan coil units, and stressed that each air conditioning system must be tailored to the home in which it is to be installed.

He advised persons adding air conditioning to their home to get a good contractor who will take the time to determine the homeowner's needs and calculate the heat gain, one who is experienced in specifying the right type of equipment, and one who has the know-how to make a proper installation.

* * *

This panel discussion, though lightly attended possibly because of insufficient advance publicity, is part of the first major activity of the Home Improvement Council, which was organized locally only last August, according to Bunting.

It plans to draw together from six counties around Detroit, various types of contractors interested in the home improvement market.

The council has established a code of good business practices that all members are asked to follow. It has adopted an identifying seal to indicate that members subscribe to this code.

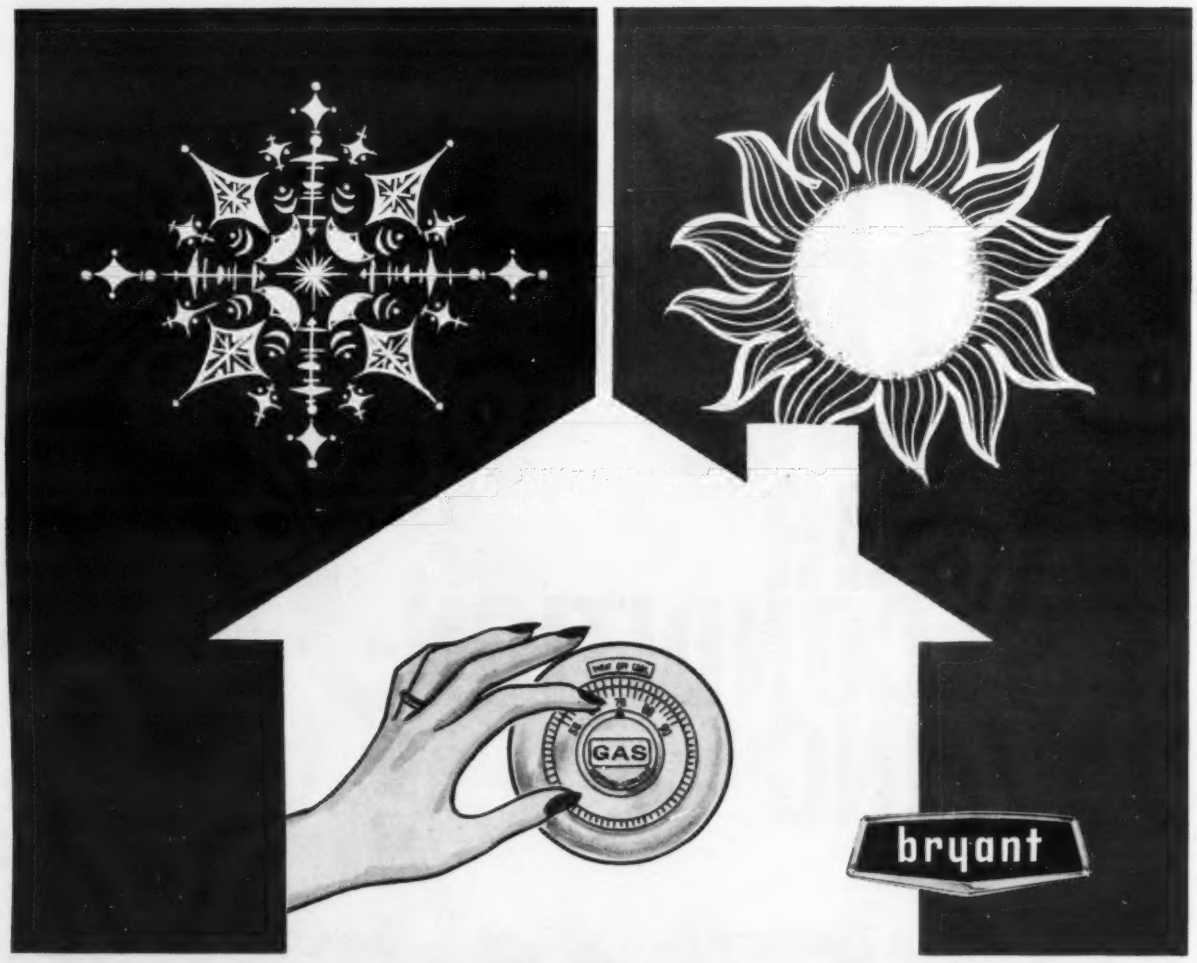
HIC plans to promote the seal to the public as a symbol of a reliable contractor. It will also provide persons interested in improving their homes with a list of member contractors.

Although the council will not offer any guarantee of members' work, it intends to drop any member who breaks the code.

Bunting said the council also plans to conduct educational programs, such as this panel discussion, to educate members on what constitutes good home improvement procedure. It will also conduct and encourage research into improved methods search into improved methods.

Goodwin, who is president of Goodwin Sales & Service Co., is the only heating and cooling contractor in the fledgling HIC at the moment. He and his sales manager, Harris H. Buell, are concentrating their efforts in the small commercial and residential market.

To develop residential business, they are sending a "filter truck" into good established neighborhoods. A salesman offers the homeowner a filter changing and cleaning service, using the opportunity of getting into the basement to survey the prospect's possible heating and cooling needs.



DEPENDABILITY

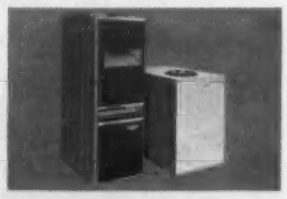
The most important feature in air conditioning today!

And a Bryant Gas air conditioning system is *truly* dependable.

Because it's Gas, weather will not disrupt service, especially on hot, hot days when it's needed most. Because it's Gas, neither you nor your customers will be bothered with excessive costs, excessive maintenance. For example, a Bryant add-on Gas cooling unit installs outdoors, uses no high amperage wiring, no valuable floor space, no water tower. And, because it's Bryant, you are backed by a company with over 50 years experience in home comfort . . . now a leader in air conditioning.

Bryant Gas air conditioning can be depended upon to furnish *whole* house comfort—all year round. And *nothing* cools more comfortably, more quietly, than Gas. Ask your Gas company for details. AMERICAN GAS ASSOCIATION

Bryant Gas air conditioning cools with an even flow of air, filtering out pollen and dust. Responds instantly to temperature changes—operates *quietly.*



A flip of one switch gives *coolness* in summer, *warmth* in winter—with compact Bryant Gas furnace (*fits in closet-size space!*) plus Bryant add-on Gas cooling unit.

LIVE MODERN FOR LESS WITH . . . GAS

Plan Lets Him Do What He Likes

This Oldtime Bryant Dealer Manages Lumber Firm's Heating, Cooling Dept.

DAVE SCHIERING, right, discusses metal fabrication requirements of a new job with foreman in charge of installation, Carl Kirchner.

MIDDLETOWN, Ohio — Dave Schiering, one of Bryant Mfg. Co.'s oldest dealers, thinks he has found the ideal solution for a man like himself who would rather spend his time in the nuts and bolts of the heating and cooling business than keeping books and worrying about office administration.

"As manager of Denny Lumber Co.'s Heating and Air Conditioning Dept., my only responsibility is to show a profit at the end of the year," Schiering says.

"I hire the men I want to, do a little advertising, sell what I want to sell, and split the net profits with the company. They take care of all the day-to-day office work. My contract with them comes up for renewal every year. It's a fine arrangement as far as I'm concerned."

Denny Officials Like It Too

Denny officials think it's fine, too. With a nominal outlay, this 75-year-old company can provide its customers with complete home services. Besides that, Dave does an annual gross business of about $140,000.

"I got into the heating business 36 years ago, mainly to get full time work," Schiering reminisces. "I was in sheet metal work in Cincinnati and managed to starve half the year. My first contact with Denny was when they asked me to finish a difficult heating job on a $100,000 house they were building.

"I had never sold a furnace in my life when they offered me a job afterwards as their heating man. But, since 1928 I had been working with Bryant equipment, and I decided to handle that line alone."

Sticks with One Brand

Since then, Schiering has been an outstanding example of a dealer choosing one manufacturer and sticking with it over the years. The advantages, according to Schiering, are that the community identifies him solely with the products he sells; national advertising evolves on him directly; there are no problems with customers price shopping in the equipment he sells; parts replacement is less troublesome; and finally, his dealership territory is guarded by the manufacturer.

Without a doubt a great deal of Schiering's success has depended on his "personal touch." On a first-name basis with his thousands of customers over the years, he bolsters a near-perfect memory with an elaborate cross-indexed card file system.

A member of just about every fraternal organization in town, he is an indefatigable letter writer and depends largely on word of mouth for favorable advertising.

"One time, however, this word of mouth business almost got me in trouble," Schiering recalls. "It was back in the early 40's when the gas conversion burner business was in high gear. I had put in a burner for a young girl who worked as the switchboard operator for the gas company.

"She was so happy with the installation that from then on, whenever someone called in for information on the subject, she'd say, 'Call Dave Schiering.' My business really began to boom and the other salesmen in town got suspicious.

"When they exposed this 'plot'—which I knew nothing about—I talked myself blue trying to prove my innocence."

Replacing his early conversion burners of 20 years ago has proved to be a big job too. When Schiering sends out a batch of personal letters to old burner customers, he averages four gas furnace sales for every 20.

Over the years Schiering has broadened his services to include gas and electric air conditioning, oil and gas furnaces, unit and duct heaters, gas and oil boilers and hydronic systems. With gas lines reaching farther out from town, 80% of his jobs will be in gas this year.

For the last 19 years Dave's right hand man has been Carl Kirchner, now foreman in charge of installation, metal fabrication, and ductwork. Two others handle service calls.

Besides his crew, Dave counts two other blessings: the cooperation of the local gas utility, The Cincinnati Gas & Electric Co.; and the backing of Denny management.

"I get many good leads from the new construction log that Denny maintains. In turn, my customers know that Denny will back me up on any work I do, just as Bryant will."

A consistent "Silver B" salesman, Schiering won a Bryant all-expense trip to Bermuda for his wife and himself in 1958, and a similar weekend trip to Nassau this year in recognition of air conditioning sales.

Summing up his sales outlook, Schiering says, "It may be a little trite to list 'service' as the most important ingredient for success.

"But our customers know that we carry an adequate parts inventory and that they can get our men out to their house in half-an-hour any time."

Five year story:

how **Amana** benefits from Anaconda Aluminum

Amana Refrigeration, Inc., Director of Purchasing, Mr. A. C. Schmieder, is shown with coils whose rigidity and resistance to damage is credited to Anaconda Aluminum tempered fin stock.

There's a lot more to buying materials than checking quality and delivery—although Amana Refrigeration, Inc., places plenty of emphasis on both. Here's the story of some extra values Amana gets because, from the inception of their cooling coil production program, Anaconda Aluminum was contacted and permitted to work closely with them.

When the idea was still new, Amana and Anaconda Aluminum worked together to develop use of no-cost fiber cores to protect fin stock. In the same manner, Anaconda Aluminum and Amana developed ways to utilize new alloys. And as Amana's sales grew—and along with this growth the need for coils grew—Anaconda Aluminum also worked with Amana's die suppliers to assure maximum efficiency.

Amana took advantage of Anaconda Aluminum engineers' understanding of metallurgical problems—resulting in a switch to a special temper. Production could be made more efficient, handling problems reduced, and fin rigidity increased. In addition, production problems with heavy gauge material in the refrigeration and freezer department were also worked out as the result of this thoroughgoing partnership between Anaconda Aluminum and its customer.

Providing consistent production help, metallurgical assistance, and extra fast delivery when customers need it is part of the product from Anaconda Aluminum. You get proof of it every time you talk with an Anaconda Aluminum customer. For information, contact your Anaconda Aluminum office or write Dept. **AC-10**, Anaconda Aluminum Company, Louisville 1, Kentucky.

ANACONDA ALUMINUM

Editorial

ASHRAE In Transition

(Continued from Page 1)

● ASHRAE stands out by its poor performance in the drive to raise its share for the new Engineering Center where ASHRAE offices now are—"clearly manifesting either a lack of professional pride or a lack of sense of identity with the decisions out of New York";

● An uneasy feeling, among engineering members, that the society has become sub-professional, that it is now dominated by commercial interests;

● Repeated complaints, at the chapter level, that "We aren't being told what is going on."

It would be much easier for us to comment on these problems if the disagreement were between easily recognized *good guys* and *crooks,* but that isn't the case at all. Discounting the inevitable struggle for power which goes on in any organization, the dispute over what ASHRAE is and shall be is between equally capable and dedicated men with strongly differing viewpoints.

Listen to one of these men: "I have no objections to the desire of salesmen to associate with us, to use our meetings as contact points. But, if we are to let these commercially oriented people *run* our society, dictate our policies, then we should remove the word *engineering* from the society's name."

A spokesman for the commercial element offers, "If we let the research-oriented engineers have their way, membership will drop from its 20,000 range to about 6,000; the society would lose effectiveness as a force in the industry."

At the chapter level, this difference in viewpoint shows itself in how the programs are chosen and slanted.

Should the programs be easily informative and appeal to the salesmen and their guests; should the programs be highly professional and appeal to that hard core of dedicated professionals who come to meetings to learn more about their profession?

(In most cities, the stronger of the predecessor societies now dominates the programs, although most chapter officers are desperately trying to find the balance of programs which will prevent complaints that minority interests are being overlooked.)

One man's answer: "We have tried everything to create interest in our programs. I have come to believe that one doesn't *create* interest; it must already be there, as it is among professionals. I am almost at the point of recommending that we assign a chapter of the *Guide* or *Data Book* for discussion at each month's meeting. There is a tremendous amount of material in these books which it would pay us to learn or review, and such a procedure would eliminate those commercially biased, allegedly objective product presentations."

Common to all complaints, justified and not, against ASHRAE policies is the statement, "They don't tell us what they are doing."

Indeed, during the months preceding the Denver vote on the research lab decision, the dissident group had to resort to private mailings to get its story to the membership. The refusal to allow the objectors to present their case in the society's publication was based on the premise that the *Journal,* as the official organ of the society, should speak with the voice of its officers.

We suggest that this is a mistake, that the journal belongs to its members; that the officers are delegates of the members; that while it may be expedient to muzzle opposition in this way, it's not quite cricket.

We're at the nub of the discussion now: Several NEWS editors are members of ASHRAE, and we disagree among ourselves about some of the points raised in this editorial. But whether we are for or against the research lab decision; whether we favor the small, professional engineers' society to a larger, commercially oriented one; whether we want casually informative chapter meetings is not the point.

The point is that the members must be allowed to make these choices. And they can't make them well without knowing what is going on. By more news in the journal, by mailings to the chapters, by direct mail—some way should be found to keep the membership informed of pending, as well as accomplished decisions.

To the rebuttal that some of our friends offer, "There are always some complainers in any organization; the dissidents are only a minority," we must reply, "The ruling group, too, is a minority. In any organization, the mass of members sits indifferently by while opposing minorities accomplish things."

It is possible, without choosing sides in a fight, to insist that the opponents be given equal weapons. If the ruling group in any organization feels confident of its policies and procedures, it should have no fear of allowing exposure to disagreeing viewpoints. To do otherwise is to throw the entire weight of the organization and its facilities against equally dedicated voices which should be heard.

ASHRAE is in transition, and it's in trouble. As disturbing as the squabbles is the increasing apathy among members, a lack of identity which is encouraged by poor communication. ASHRAE President John Everetts' October message in the journal clearly and candidly outlines the problem.

We have no official position on which way ASHRAE should go, but we do agree the direction it takes should reflect an open agreement, openly arrived at.

Not every petty criticism should be afforded the dignity of full-blown discussion. But chronic, deeply rooted dissatisfaction should be aired, not quashed by parliamentary maneuvering.

All that mankind has done, thought, gamed, or been: it is lying as in magic preservation in the pages of books.—*Thomas Carlyle.*

* * *

The illusion that times that were are better than those that are, has probably prevaded all ages.—*Horace Greeley.*

* * *

The brightest flashes in the world of thought are incomplete until they have been proved to have their counterparts in the world of act.—*John Tyndall.*

TWO FOR INSIDE DOPE

U. S. Department
of Commerce
Washington, D. C.

Editor:

I have read your "Inside Dope" column in the Aug. 28, 1961 issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS with great interest. Your cooperation with the Department of Commerce in the export expansion progam is greatly appreciated, and we feel that the article is an excellent exposition of the importance of increased trade.

THOMAS E. DRUMM, JR.,
Administrator

●

St. Louis, Missouri

Editor:

Cheers for your satire on the subject of the Bonus Racket in Oct. 2 issue of the NEWS.

Talk about our teen-age bracket and its problems. How can be expect our kiddos to know "values" when we tell the world an athlete is worth more money to sign a contract than Dad makes in 5 to 25 years?

Yes, I'm the owner of a good little agency, am college and D'Ary trained with *many* years' *practical* experience behind me and my yearly check wouldn't equal the salary or bonus of most baseball, football, and basketball players, many of whom are not as well trained in meeting life's problems, let alone do it from a wheelchair for 15 years.

As much as most of us need that "green stuff" called money, I'd prefer that a boy of mine be a working man at less than $10,000 than take that much for signing *any* athletic contract.

EDWARD ANSON SPRAGUE

P.S. I like to follow sports.

& TWO FOR TECH CENTER

Wichita Falls, Texas

Editor:

I wish to take this opportunity to thank you for my copy of Instruments in Service Work. I feel this is an invaluable book covering the proper instruments for use in service work, and When, Where, and How to use them. No serviceman should ever be caught without such a guide.

A few years back Mr. Versagi published an article under the heading of Basic Chemistry followed by Chemical Corrosion. If you still have any copies of these books, please send me a copy of each. I had a copy of these articles I used for O.J.T. training purposes, but have misplaced them. I feel at a loss without these fine articles to use as a guide.

I am enclosing $2.00 by check to cover the cost. If this is not enough, please bill me.

WILLIAM M. POPE

●

Collard Road, Point Clare
Via Gosford N.S.W.
Australia

Editor:

My work mates and I have had the pleasure of reading some of your excellent articles published under the heading of "Tech Center."

I am writing on behalf of us all to enquire whether you have published these articles in book form. We all agree that it would be of tremendous value in our everyday work to have such clearly understandable data available.

D. ARROWSMITH

Thought is being given to the idea of a book based on Tech Center—Editor.

AIR CONDITIONING HEATING & REFRIGERATION NEWS
F. M. COCKRELL, Founder

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Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

TECH CENTER by *FRANK J. VERSAGI*

Internal Overload Protectors (3)

Because of the growing importance of internal overload protection, the NEWS invited manufacturers of such devices to discuss briefly their approach to motor protection and their products. This is another in this group of discussions.

"Experience over the past few years has demonstrated that hermetic refrigeration compressors operating over a wide range of load and ambient temperature conditions are best protected against overheating of the motor windings by internal protectors mounted directly on the compressor motor and located within the sealed housing. Internal protectors are being used in increasing quantities by the refrigeration industry and particularly in the difficult applications for the best protection job at minimum cost," prefaced A. P. White, product development manager, motor controls, Metals & Controls, Inc., division of Texas Instruments, Inc.

" 'Klixon' hermetically sealed protectors for internal mounting are available in a range of types and sizes for use on fractional and integral horsepower single-phase and polyphase motors up through 7½ hp. Two basic types of protectors are offered in production: *linebreak* and *pilot circuit*," White explained.

Typical internal line-break protectors are illustrated in Fig. 1. Both types shown interrupt the full compressor motor current direct. The thermal element is the Klixon snap-acting disc. Operation is in response to compressor motor winding temperature and current, "so that protection is obtained for abnormal running conditions and stalled rotor."

Two types of pilot circuit protectors are illustrated in Fig. 2. Both are used in conjunction with a magnetic contactor which provides the motor current interrupting means.

The thermostat and supplementary overload in Fig. 2 are used together as a system.

The thermostat is installed in the motor stator winding and senses winding temperature for protection on abnormal running conditions and also limits maximum winding temperature on stalled rotor.

The supplementary overload is located externally. Its thermal element carries motor line current to provide a fast trip on locked rotor.

"The contacts of both devices are in series with the contactor coil. Winding temperature is limited to a safe value on automatic recycling. Manual reset is available through the wiring method of the contactor coil circuit," the company says.

The second type of pilot circuit device illustrated in Fig. 2 is the rate of rise snap-action thermal sensor. It is installed directly within the motor stator winding. Its operation is by means of a rate of rise thermal element (rod and tube) which modulates the tripping point to match the rate of heating of the winding.

"Protection is obtained for both abnormal running conditions and stalled rotor. The snap-action contacts are wired directly in the contactor control circuit. This device is now in the sample stage and production will be available Fall 1961.

"The increased acceptance of internal protectors is based on their ability to limit motor-winding temperature to a narrow temperature range over widely varying operating conditions. An example is protection for heavy load and low voltage during cooling operation on one hand and for light load and low voltage during heating operation on the other hand.

"Add to this protection for locked rotor at extremely low line voltage and for running with loss of refrigerant. These are a few of the many abnormal situations which can occur in hermetic refrigeration compressors and for which overtemperature protection of the motor winding should be provided."

Internal protectors once installed are not accessible for repair or replacement; "therefore, they demand an extremely high level of quality. Manufacturing techniques and inspection procedures are specially devised to provide the quality required. Illustrative of this is the fact that assembly operations are performed in a dry box fitted for heating, vacuum, dry air and welding operations in order to insure extreme cleanliness and dryness prior to sealing.

"Also, sealing techniques are designed for exceedingly small leakage rates and present requirements on Klixon internal protectors are based on maximum allowable leakage of 1 x 10^{-9} cc/sec of air at one atmosphere pressure difference.

"Although all applications will be better protected with internal protectors, it may be well to keep in mind that some applications operating over a narrow range of load and ambient conditions may be adequately protected by *externally mounted thermal protectors.*

"*Internal* protectors represent an improvement in the art of protection for hermetic refrigeration compressors and provide the means for obtaining protection for conditions which might otherwise be disregarded because of the relatively high cost of other types of protection means," White concluded.

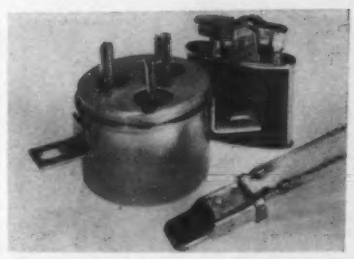


FIG. 1—Typical Klixon internal line break protectors for fractional and integral hp. single and three-phase compressor motors.

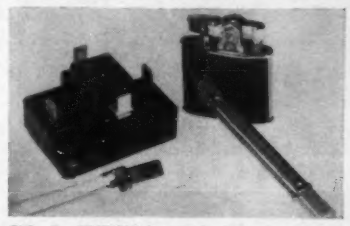
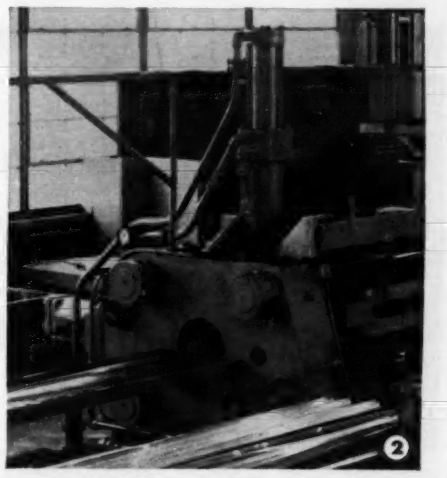


FIG. 2—KLIXON integral pilot circuit protectors for integral hp. compressor motors. Left: internal thermostat and external supplementary overload. Right: rate of rise thermal sensor.



YOUR BENEFITS

from buying Wolverine aluminum tube

COMPLETE TUBULAR PRODUCT LINE—Wolverine Tube, Division of Calumet & Hecla, Inc., manufactures aluminum tube in a wide range of sizes and alloys in straight lengths and coils. It is available in both drawn and extruded form, in prime surface or with integral fins (Wolverine Trufin®).

FACILITIES—Wolverine's aluminum production facilities are among the most complete available and include such operations as those pictured on this page: (1) casting; (2) extruding; (3) standard coiling and fabrication; (4) level-wind coiling—to name but a few.

TUBING SPECIALISTS—Equipment is only as good as the men who operate it. Wolverine employees take pride in their Tubemanship—have an average length of service of 11 years. More than 150 employees are active members of Wolverine's Twenty-Five-Year Club.

SERVICES—Wolverine believes that the customer is all important—expresses this philosophy through its IOA (Individual Order Attention) program which begins with the receipt of an order, follows it throughout the entire manufacturing process, and ends only when that order is in the customer's plant and acceptable in every way.

TECHNICAL ASSISTANCE—Wolverine Tube uses its years of experience, its skilled engineering, and its research and laboratory facilities to help customers specify exactly the tubing type and alloy best suited to their needs.

MAY WE HAVE YOUR NEXT ORDER?

WOLVERINE TUBE
DIVISION OF
Calumet & Hecla, Inc.
DEPT. R, 17246 SOUTHFIELD RD., ALLEN PARK, MICH.
TUBEMANSHIP in Copper—Copper Alloys—Aluminum—Special Metals
PLANTS IN DETROIT AND INKSTER, MICHIGAN AND DECATUR, ALABAMA.
SALES OFFICES IN PRINCIPAL CITIES.

THE NEW FACE of Minneapolis-Honeywell's 1962 pneumatic round thermostat brings a smile to the face of pert Sue Gentry. In addition to its new face (silver numbers on a black background), the thermostat has undergone 11 mechanical changes designed to provide better temperature control, the firm said. Covers are available in nine colors to make it easier to match the thermostat with decor of a room.

Low Temp Utility Cabinets Available

● A new line of low temperature utility cabinets is being offered by Deltair Products, Dept. AH&RN, Villa Park, Ill.

Called the "Deltair Templo," the cabinets are available in 5 and 13-cu ft capacities with five temperature ranges to -120°F. All cabinets feature hermetically-sealed air-cooled refrigeration systems. Instrument panel includes built-in indicating controller, pilot lights, and selector switches.

Water Cooler Has Refrigerated Storage Area

● A large, refrigerated storage area is only one of the extra convenience features built into a new type of water cooler that also serves as a refrigerator for numerous locations, according to Sunroc, Dept. AH&RN (Division CF-2), Glen Riddle, Pa.

This refrigerator-cooler, called "Cool-R-Fridge," "serves properly chilled drinking water as well as 185°F hot water for making coffee and other hot drinks at the point of use," the company said. "In addition, it holds foods, beverages, and other commodities in a fully accessible refrigerator which also provides ice cubes that can be made four to five times daily.

"Extra refrigerated storage space is made available in the full-width, full-length, side opening door. The lower, unrefrigerated door area accommodates an optional rack with storage shelves for hot drink mixes, empty bottles, and other items."

Cool-R-Fridge is available in bottle type as well as pressure type, and can be furnished for just cold water or for cold and hot water service.

Gas-Fired Lowboy Furnaces Offered

● The production of a new series of lowboy furnaces to complete its economy lines has been announced by Mueller Climatrol Div., Worthington Corp., Dept. AH&RN, 2005 W. Oklahoma Ave., Milwaukee 1, Wis.

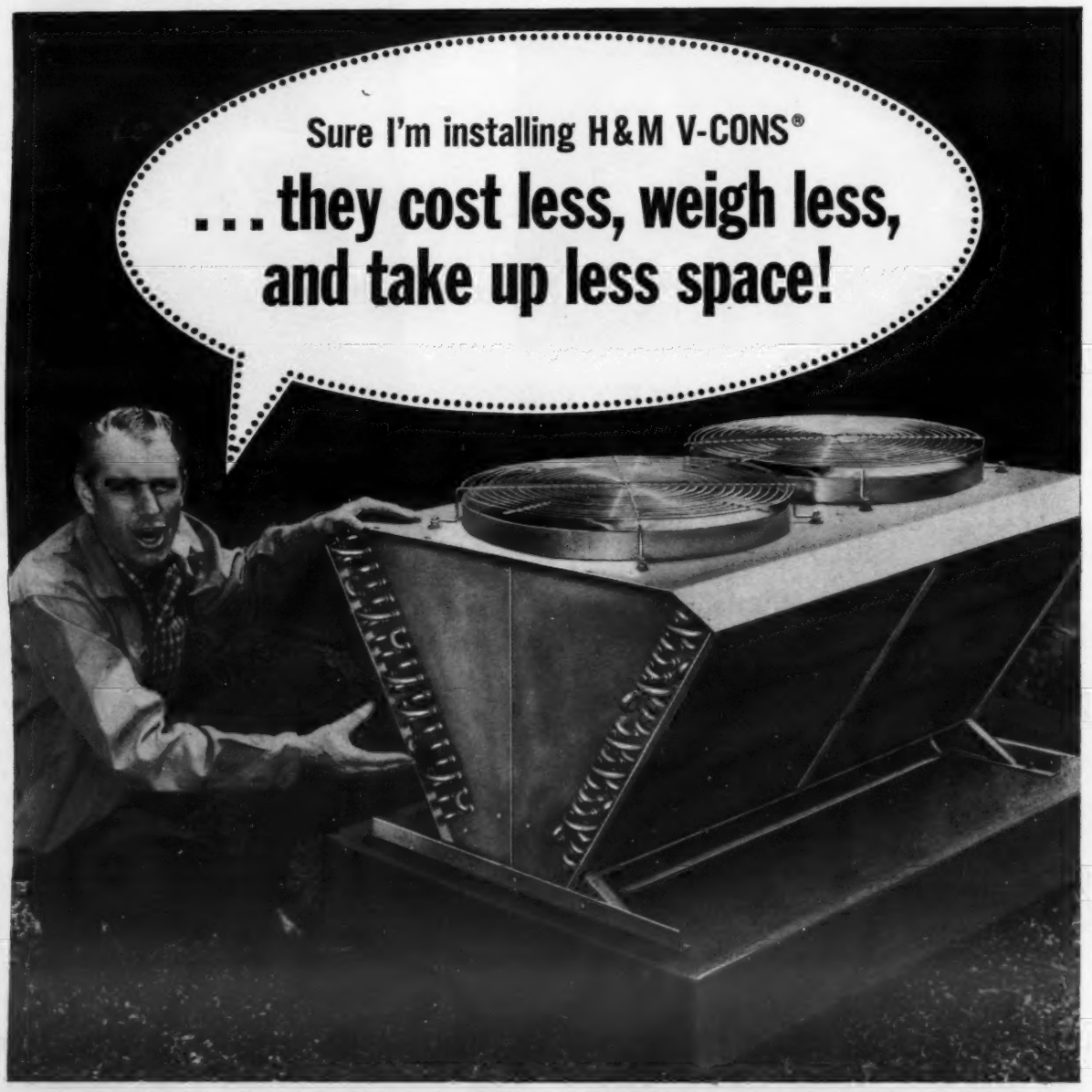
The new gas-fired lines now include lowboys, highboys, and counterflow units.

Five basic models are available in the belt-driven 147 series in capacities ranging from 75,000 to 200,000 Btuh outputs. High static models are also offered for adding summer air conditioning. Cooling coil cabinets presently used on the 144/145 highboy line can also be used on this line to promote standardization of inventory stocks.

A direct drive unit is also available in a 100,000 Btuh input. The smallest unit stands 40¾ in. high, is 14½ in. wide, and has a depth of 47½ in. The largest model stands 42¾ in. high, is 34 in. wide, and has a depth of 52 in.

Sure I'm installing H&M V-CONS®

... they cost less, weigh less, and take up less space!



No wonder these Halstead & Mitchell V-Cons® are the hottest selling air-cooled condensers around. First off, they give full performance yet cost up to 15% less than comparable capacity condensers.

Second, they weigh about half as much because they are housed in light-weight, corrosion-resistant aluminum. The fan blades are aluminum, too. Thus, roof loading is much lower and rigging far easier.

Next, they combine the low height and quiet operation of vertical discharge condensers with the minimal space requirements of horizontal discharge units.

Currently available in 3, 5, 7½, and 10 ton sizes, these new units round out Halstead & Mitchell's line of vertical and horizontal discharge condensers of 3 to 100 ton capacity. All models feature H&M's exclusive Turbu-Flo fins, which improve heat transfer between refrigerant and air.

For more information, contact your wholesaler, or write for Bulletin VC-103. Halstead & Mitchell Co., Dept. H104 Bessemer Bldg., Pittsburgh 22, Pa.

HM

Halstead & Mitchell

Air-Cooled Condensers • Water-Cooled Condensers • Cooling Towers • Air Handlers and Coils

Export Representative: Sobal-Kielmann, 15 Williams Street, New York, New York

Ice Machine Has Drum Vending Mechanism

● Development of a compact new ice vendor called the "Spinette" has been announced by the K. G. Brown Mfg. Co., Inc., Dept. AH&RN, Mattituck, N. Y.

This latest addition to the Brown line features a drum vending mechanism that makes possible coin operation in a 4-ft by 4-ft box with a capacity of up to 44 10-lb bags and storage facility for 30 more, the company indicated.

Structurally and mechanically, the Spinette boasts all the engineering and design features of the other Brown stations—blower refrigeration, electric automatic defrost, wrap-around aluminum construction bonded to polystyrene insulation, and automatic fluorescent lighting, it was stated.

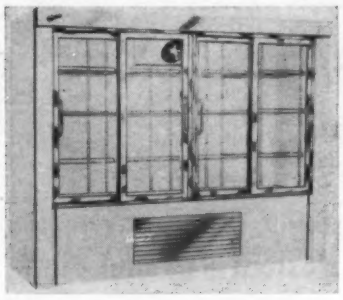
Thinking of—

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

Check the

CLASSIFIED ADS

Your opportunity may be there.



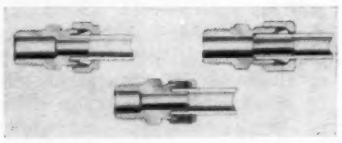
Dairy and Beverage Wall Case Offered

● A new self-contained dairy and beverage wall case, model BB 98 SC, is being offered by Coldin Cabinet Co., Inc., Dept. AH&RN, 2800 Webster Ave., New York 58, N. Y.

Features of the four-door case include all steel welded cabinets, porcelain enamel front, baked enamel ends and rear, polished aluminum interior, stainless steel interior bottom, stainless steel trim and chrome hardware, sealed compressor, fluorescent lights, and double-glazed display fronts, according to the company.

Powered by a ½-hp condensing unit, the case is 98 in. long, 32 in. wide, and 78 in. high. It has a display area of 70 sq ft and a 68-cu ft capacity.

Brass Fittings Couple Plastic Tubing



● Fast, easy, pressure-tight coupling of plastic tubing without the use of special tools is said to be possible with a new line of brass fittings developed by Spanco Brass Co., a Parker-Hannifin division, Dept. AH&RN, Otsego, Mich.

Both low pressure and high pressure couplings are available, in three sizes, for polyethylene and similar plastic tubing. Tubing sizes accommodated include ¼-in. o.d. with .040-in. wall; 5/16-in. o.d. with .062-in. wall; and ⅜-in. o.d. with .062-in. wall.

Temperature rating is to 140°F, and recommended working pressures for this tubing are up to 136, 169, and 141 psi, respectively, for the three sizes.

Low pressure fittings are assembled by hand until finger tight. These are recommended for pressures below 40 psi, with steady flow and slight vibration. The high pressure style has a tapered outer sleeve of du Pont "Delrin" plastic. Tubing is inserted into the assembled fitting and nut is tightened with a wrench. This type is recommended for pressures up to 270 psi, with steady to surging flow and slight to severe vibration.

Milk Display Case Is for 'Spot Specials'

● Introduction of a new milk display case has been announced by Fogel Refrigerator Co., Dept. AH&RN, 5400 Eadom St., Philadelphia 37, Pa.

Fogel's designers applied the same "space-saving, impulse-attracting" design principles to this horizontal case as they did to the company's previously-introduced WJ-15-GL upright "Space Saver" milk merchandisers, it was indicated.

The new "Spot Special" unit is being made available in two models—the SS-30 with a 134-qt capacity and the SS-48 with a capacity of 230 milk quarts.

Measuring 30 in. square and 37 in. high, the model SS-30, as well as its slightly larger companion, the SS-48, is equipped with a glass front and transparent push-back lid. For versatility, the unit is supplied with a "Formica" shelf suitable for use as a counter top or for tie-in displays.

Refrigeration is supplied by a capillary tube system powered by a hermetic compressor unit.

Limit Switch Is for Underwater Operation

● A low-cost, waterproof precision snap-action limit switch said to be capable of underwater operation without leakage has been developed by Controls Co. of America, Dept. AH&RN, 9555 Soreng Ave., Schiller Park, Ill.

The new switch is especially suited to refrigeration and many other manufacturing or processing operations involving washing, steaming, or highly humid environments, it was indicated. Key element of the switch is the plunger, made of "Delrin," which is sealed in a special neoprene boot designed by Controls Co. engineers, and the outer case is nylon.

The switch is available with wire leads potted in epoxy resin or spade terminals.

'Strip-All' Won't Harm Metals, Is Non-Flammable

● "Strip-All," a new concentrated liquid cleaner, has been developed by the Stewart-Hall Chemical Corp., Dept. AH&RN, 222 Washington St., Mount Vernon, N.Y.

"The product strips carbon, sludge, varnish, paint, and tar and other encrustations from all types of metal parts without harming the metal itself," the company said. "Strip-All's 'sealed action' vapor barrier concentrates its cleaning power, prevents odor and the evaporation of active ingredients. It is non-flammable and non-explosive."

Strip-All is available in quart, 1½ gal., and 6-gal. size Kits consisting of the cleaner and an immersion basket. Parts to be cleaned are placed in the basket and lowered into the container until they are completely immersed in the fluid.

The crust is loosened in a few minutes, and the basket and parts are then removed and rinsed under a water faucet, according to the company.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

MIGHTY MITE PROTECTS MOTORS

Against

OVERLOADS
OVER VOLTAGE
UNDER VOLTAGE

MIGHTY MITE MOTOR PROTECTORS

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street Akron, Ohio
SAA 3335/94B

Quiet...

WAGNER Polyphase Resilient Mounted Motors in ratings through 10 horsepower

Quiet, vibration-free performance is essential when motors are installed in areas where noise must be held to a minimum . . . in hospitals, churches, schools, office buildings, restaurants and similar locations where quiet is needed or wanted.

Such installations have created a need for larger polyphase motors that whisper while they work. Wagner has met this need by expanding its line of polyphase resilient mounted motors to include standard ratings through 10 hp.

You certainly have applications that call for a smooth running motor, cushioned by resilient mountings. To make sure they're quiet, specify Wagner Polyphase Resilient Mounted Motors. Only Wagner can provide an entire range of ratings through 10 hp.

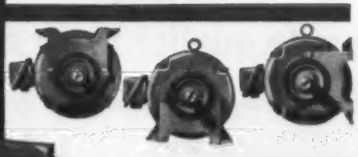
Constant research and development have kept Wagner up front in electric motor design for more than 65 years . . . made the name Wagner one you can depend on in choosing electric motor drives.

Your nearby Wagner Sales Engineer can help you select the right motor to meet your requirements. There are Wagner branch offices in 32 principal cities.

Wagner Electric Corporation
6463 PLYMOUTH AVENUE, ST. LOUIS 33, MISSOURI

WH60-14

SLEEVE OR BALL BEARING
These motors are furnished with quiet running steel-backed babbitt-lined sleeve bearings of high load carrying capacity. Ball bearings can be supplied when desired.



CEILING, SIDEWALL OR HORIZONTAL MOUNTING
You can mount these motors on walls or ceilings by rotating the cradle base 90° or 180°. Motor stays dripproof.

NEOPRENE CUSHIONING RING
Annular mountings, of oil-resistant neoprene bonded to steel rings, cushion the motor in its cradle base to absorb the small amount of vibration that remains in the most carefully balanced motor.

What's Going On in Commercial Refrigeration

News of Markets, Products, Methods

Klein Advises NARGUS

Don't Let Distinctive Interior Unbalance Food Merchandising

CHICAGO—A new approach o food market interiors is ecessary to establish a distinc- ive store personality, Ray M. Klein, trade relations manager, Hussmann Refrigeration, Inc., old a recent clinic on store anagement sponsored by the National Association of Retail Grocers of the United States nd the School of Business of Florida State university.

The clinic was held in International House on the University of Chicago campus.

While creativity is essential in planning the distinctively different storage arrangement, it must not be allowed to throw the store out of balance from a merchandising viewpoint, Klein said.

"The concept of balanced merchandising must be the underlying principle of successful merchants," he continued. "Build a store, not a store plan. Look for a good plan, not good looking draftsmanship."

Store planners must know merchandising in depth and have an intimate knowledge of equipment, Klein said. "Complete the store in the planning stage," he added.

Hussmann's store planning specialist, Joseph Tanaka, illustrated techniques and methods for "creating a conducive environment for marketing and shopping."

The use of lighting, color, and decorative touches can create a "warm cocoon of merchandising," he said. His concept of design is to surround the customer in an intimate shopping area.

"Or install a canopy to provide a close, friendly, feeling," he said, "and use attractive signs to surround the customer with a word image. You can achieve a change of space by contrasts in lighting levels."

Bruce Chapman, director of management development for NARGUS, urged retailers and store planners to look at their operations objectively.

He suggested a way of measuring the effectiveness of a layout for a perishables preparation area, using the information of sales per man hour, labor costs per dollar handled, tonnage per man hour, and packages per man hour.

"First do the best you can do with what you have, before you eagerly reach for something new," he advised.

NARGUS announced that it is expanding its series of seminars and will present its next program on personnel at Minneapolis Jan. 22-24, 1962, followed by the regular spring seminar on March 19-21, 1962, at International House, on the subject of financial management.

Sunroc Gives Data on Drinking Fountains

GLEN RIDDLE, Ga.—Literature is now available on recently introduced stainless steel drinking fountains that are "readily converted at any time to supply refrigerated water," according to Sunroc Corp., Div. SR, here.

These are the Sunroc SR Fountains designed in all stainless steel or with a vinyl clad apron that fits over a compact cooling unit. The brochure (form A-392R) provides description. specifications, and roughing-in instructions.

Johnson Represents Temprite In East

BIRMINGHAM, Mich.—Bob J. Johnson has been appointed sales representative of Temprite Products Corp. in the territory of southern New Jersey, Pennsylvania, Delaware, Maryland, Washington, D. C., Virginia, and West Virginia.

B. J. Johnson

He will work with Temprite distributors and wholesalers in the sale and engineering of this company's line of self-contained drinking water coolers, carbonators, oil separators and other liquid cooling devices and accessories. Johnson will headquarter at Springfield, Delaware County, Penn., P. O. Box 266.

Bohn Division Names Eastern Regional Mgr.

DANVILLE, Ill. — Donald Stover of York, Pa., has been named eastern regional manager for the Danville Div. of Bohn Aluminum & Brass Corp.

D. Stover

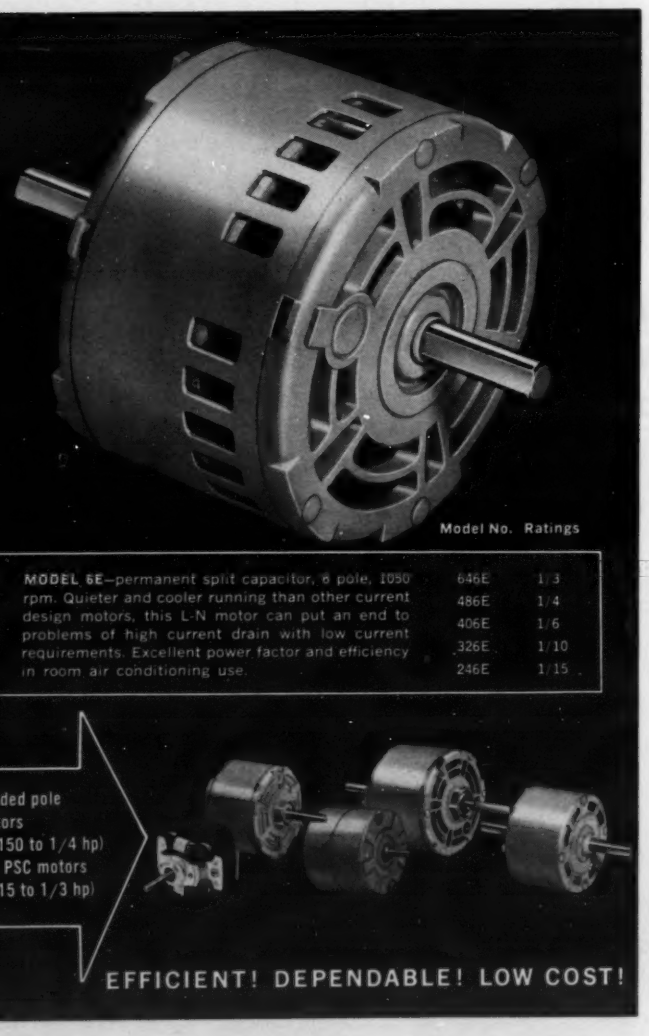
He will be responsible for field management related to Danville Div. products through all channels of sale in the New England and South Atlantic States (except Georgia and Florida), according to H. Blake Thomas, vice president of Bohn and manager of the Danville Div.

Stover joins Bohn with a broad background of experience in engineering and administrative capacities with other manufacturers.

Weiss Plans To Produce Ice Makers

ST. LOUIS — Plans for producing automatic ice making equipment were disclosed recently by Louis Weiss, who operated Ideal Cooler Corp. for 30 years prior to its recent sale to the Vulcan-Hart Corp. of Louisville and Baltimore.

Weiss told the NEWS that he and his son, Marvin, will manufacture ice cube and ice flaker machines shortly after the first of the year. The machines will be made under the trade name of "Speed Freeze," and under the firm name of Weisco Products Corp. at 2953 Easton Ave. in St. Louis.


Model No. Ratings
MODEL 6E—permanent split capacitor, 6 pole, 1050 rpm. Quieter and cooler running than other current design motors, this L-N motor can put an end to problems of high current drain with low current requirements. Excellent power factor and efficiency in room air conditioning use.
646E 1/3
486E 1/4
406E 1/6
326E 1/10
246E 1/15
ded pole
ors
150 to 1/4 hp)
PSC motors
15 to 1/3 hp)
EFFICIENT! DEPENDABLE! LOW COST!

PECIFY LEECE-NEVILLE MOTORS

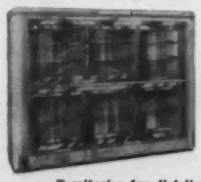
upgrade quality in air conditioners, frigeration, pumps, fans, heating units

ce-Neville offers you a complete line of shaded pole and manent split capacitor A.C. motors and fractional D.C. motors th horsepower ratings from 1/150 to 1/3 hp. All L-N motors capable of meeting U.L. or C.S.A. application tests. Select a c unit modified to your specification, or a special motor (custom neered) to meet your requirements. Modern facilities assure quality and delivery to your schedules. For complete information, write The Leece-Neville Company, Department AC-10, rgia Division, Gainesville, Georgia.

D. C. MOTORS — Leece-Neville custom engineers more than 300 new D.C. Motors every year for car, home and industry. For details, write D.C. Motor Division, Cleveland 3, Ohio.

QUALITY ELECTRICAL EQUIPMENT Leece-Neville SINCE 1909

WALL CASES



Howard manufactures a complete line of commercial refrigerators and freezers. Priced right, provides more daily sales and profits.

Territories for distributors and manufacturers' agents.

For a free Master Catalog write to Dept. N.

Howard Refrigerator Co., Inc.

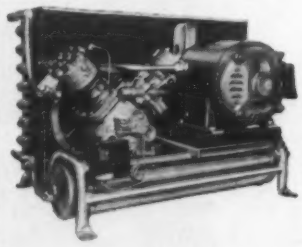
Grant Ave. and Blue Grass Rd., Phila. 15, Pa.

SUPERMARKET OWNERS GIVE FOUR REASONS FOR CHOOSING OPEN TYPE COMPRESSORS

In the first part of a study recently published by *Air Conditioning, Heating & Refrigeration News*, a 107-store supermarket chain revealed these reasons for preferring open type equipment:

- Much longer life
- Closer balance between high and low sides, with more satisfactory operating conditions
- More universal applicability—wide range of capacities; compressor displacement adaptable to new load conditions
- Unsurpassed service history according to actual records

FOUR REASONS WHY SUPERMARKET OWNERS CHOOSE LEHIGH OPEN TYPE EQUIPMENT



- LOW COST
- IMMEDIATE DELIVERY
- LONG-TERM DEPENDABILITY
- CONTINUOUS SERVICE

LEHIGH BLU-COLD COMPRESSORS AND CONDENSING UNITS

¼ H.P. to 7½ H.P. ■ AIR—AIR-WATER—WATER

Lehigh BLU-COLD

LEHIGH

LEHIGH MANUFACTURING COMPANY,

Division of Lehigh, Inc., Easton, Pa.

Manufacturers of Hermetic and Open Type Condensing Units; Compressors; Receivers; Condenser Receivers.

SHERER-GILLETT zone managers attend annual meeting in Marshall, Mich.

Sherer-Gillett Zone Managers See Excellent Opportunity for Sales Growth

MARSHALL, Mich.—An open forum discussion taking up a major portion of the first morning's program was a feature of the annual meeting of Sherer-Gillett Co.'s zone sales managers.

During the forum, the zone men were given the opportunity to present their individual recommendations and ideas on company products and promotion.

The two-day formal business sessions were held at the VFW Hall with a background exhibit of new product developments.

Following a welcome greeting by Renslow P. Sherer, Highland Park, Ill., honorary chairman of the board of directors, basic policies of the company were outlined in an address the first morning by John H. Coolidge, president.

Trends, Forecasts

The afternoon schedule included a talk on trends and forecasts in the food market field by Robert Burback, regional sales manager of the *Progressive Grocer* magazine; a review with comments on company advertising by A. L. Bradshaw, account executive with the Jaqua Co., Grand Rapids, the firm's advertising agency; and an outline of available financing of term sales by George Burkett of Commercial Credit Co., Baltimore, Md.

The second day's sessions included a discussion of new products, visits to local food markets, a tour of the factory, and individual departmental conferences.

See Football Game

The zone sales managers concluded the meeting by attending the Michigan State - Stanford football game at East Lansing as guests of the company.

Zone men present were E. W. Orrall and Robert E. Orrall, Braintree, Mass.; Raymond Parr, Baltimore, Md.; Elmo Miars Madison, N. J.; Quentin Stevens, Tampa, Fla.; C. C. Stinnette, Montgomery, Ala.; R. O. Scheible, Columbus, Ohio; Robert Groth and Stanley Groth, New Richmond, Wis.; John Lindbloom, Missions, Kan.; Earl Jones, San Jose, Calif.; Monte Praker, Boulder, Colo.; Harold Asmussen, Tacoma, Wash.; Patrick Gammon, Marshall.

Also attending was Arthur P. Middlebrook of Sabal-Kielmann, Inc., New York City, the company's export representative.

Company executives in charge of the convention were John F. Miller, Larry J. Pahl, and John S. Twist.

Concensus of opinion of the zone managers following the meeting was that with the continued growth in the country's population, the heralded national prosperity, and the continued expansion and remodeling programs in retail food establishments, the company was afforded an excellent opportunity for increased sales volume, it was stated.

Intensified Sales, Marketing Program Planned for Crystal Tips Ice Makers

MINNEAPOLIS — Jay R. Resch, president of American Automatic Ice Machine Co., has revealed plans for an intensified sales and marketing program for "Crystal Tips" ice makers.

These plans include a reorganization in the sales department and consolidation of the company's main offices in Minneapolis with its parent company, McQuay, Inc.

American Automatic general offices have been consolidated in Minneapolis. With this move all administrative functions of the company are now handled from Minneapolis.

These include sales, order administration, advertising, engineering, sales promotion, service, purchasing, credit, inventory control, traffic, and accounting. Complete manufacturing operations will be continued in Faribault.

Also effective immediately is the appointment of Dean Seitz as vice president-marketing for American Automatic. Seitz has been sales manager, Refrigeration Dept., for McQuay for over three years.

Emmett Bailey will continue as vice president in charge of sales of American Automatic.

In this capacity he will continue to supervise the activities of American Automatic field representatives and will be in charge of the company's distributor-dealer sales programs.

American Automatic will also discontinue immediately the function of its regional sales managers. Present regional sales managers have been reassigned to other positions in the company.

G. M. Cook was appointed advertising and sales promotion manager for McQuay. In his new position, he will be in charge of advertising and sales promotion for both companies.

Robert Peterson has been appointed to the new post of order administrator. Lorain Ruble remains as service manager.

In connection with these appointments, Resch said' "During the past year and a half, the Crystal Tips line of automatic ice makers has been expanded with addition of three new models. Other new products will be unveiled in the near future.

"The development of the product line has also rapidly expanded our sales. We believe this new organization and consolidation of our offices will help up keep abreast of this increase in sales and product development."

Fast defrost! Economical operation!

LARKIN

ELECTRIC DEFROST
LOW TEMPERATURE
HUMI-TEMP

Here's the unit for the cooling jobs below 32°F. The automatic electric defrost keeps the coil free of ice without overheating—enables the evaporator to function at greater efficiency and lower operating costs. Independent defrosting and refrigeration circuits give dependable, trouble-free service.

Complete Defrost

Sealed tubular heaters are integral parts of the coil. They defrost by *radiation, conduction, and convection*—work fast so the coil can work best.

Fully Adjustable

The defrosting cycle is controlled by a time clock. It can be adjusted for any number of defrosts a day and for any length of time from 2 to 55 minutes.

At the end of the defrost cycle, an adjustable delay period allows the compressor to start before the fans to prevent a blast of warm moist air from entering the refrigerated area.

Investigate the many advantages of the LARKIN Electric Defrost Low Temperature Humi-Temp.

For complete data, see your wholesaler or write for bulletin number 1055.

REASONS WHY YOU'LL BE GLAD YOU BOUGHT IT

- Patented Larkin Cross-Fin Coil—aluminum fins and staggered tubing.
- Heating elements easily removed and installed through side access panel.
- Drain pan has conductive rubber electrical heating pad which assures complete drainage.
- Standard permanently lubricated heavy-duty motors designed for low temperature applications—resilient mounting on adjustable slotted base.
- Heat exchanger provided as standard equipment.
- Heavy gauge, die-stamped aluminum case, finished in Larkin Blue.
- UL approved.

BASIC RATINGS

Model	Capacity Btu/hr @ 10° TD F	Total Surface Area	Cfm	DEFROST DATA Coil Heater Watts	DEFROST DATA Drain Heater Watts
ELT-26	2600	69	800	600	155
ELT-32	3200	79	1000	900	155
ELT-42	4200	98	1400	1080	230
ELT-52	5200	131	1550	1440	285
ELT-65	6500	150	1700	1920	285
ELT-82	8200	201	2200	1920	285
ELT-104	10400	226	2800	2880	400
ELT-130	13000	301	3200	3840	510
ELT-160	16000	401	4400	3840	510
ELT-240	24000	501	5600	4800	620

WATCHDOG OF THE NATION'S FOOD AND COMFORT® LARKIN®

LARKIN COILS INC.

519 MEMORIAL DRIVE, S.E., ATLANTA, GEORGIA

Display Using 'Curtain of Air' Boosts Dairy Sales to 11% of Store's Total

DENVER—Replacing a 12-ft dairy display case with a 16-ft Friedrich "curtain of air" model and topping it with an extra non-refrigerated shelf at eye-level has enabled Foodland Super Market here to change its dairy merchandising techniques to fit the changed nature of its clientele.

As a result, dairy product sales have jumped to a little more than 11% of the $31,000 monthly volume of this independent supermarket, according to Ellis Priest, owner.

"We spent $2,600 for the new refrigerated case because the area we sell has changed sharply during the past few years," Priest said. "Many old homes are being torn down and replaced with low rent apartment houses.

SMALL SIZES and extra shelf in refrigerated case pay dividends for Foodland superette in Denver, says owner Ellis Priest (foreground).

"As a result, there are six to seven times as many people within a convenient walking distance of the store. To meet their needs, it has been necessary to stock a wider variety of dairy products and to feature the smallest possible packages.

"By adding another 4 ft and gaining the advantage of four shelves instead of three, we increased inventory by better than 20%, primarily in small sizes."

At the same time, the Denver supermarket operator contracted with his fixture supplier to add a fifth shelf, at eye level. This made it possible, for the first time, to display cheese bricks, in ½-lb, 1-lb, 2-lb, and 3-lb cartons, right with the perishable varieties protected by a moving current of cooled air.

INCREASED STOCKS

Priest doubled the number of brands of butter offered and increased his oleomargarine choice by half. He contracted with a single source for most other dairy products, which provides him with an average of 20% markup on all dairy product items.

Then, he changed over the checkstand cash registers to provide a key for dairy products, and began watching the results closely.

They were sensational. At the end of sixty days, the dairy products department had zoomed to 11% of total sales, a little more than $3,200, and showed every evidence of steadily increasing, rather than decreasing.

This is credited entirely to the wider inventory, the eye-appeal of the big refrigerated case, and the compacting of all related items around the case.

Crackers, bread, etc., are now displayed right up against the right end of the display case.

C. V. Hill Names Clifford J. Kimmel

TRENTON, N. J.—Clifford J. Kimmel has been appointed special project engineer for C. V. Hill & Co., Inc., it was announced by G. J. Doyle, president.

C. J. Kimmel

Kimmel will be placed on special assignment with National Refrigeration Mfg., Inc., Glendale, Calif., West Coast Div. of the Hill corporation, and will work under the direction of National's president, Charles Walling.

Kimmel, a graduate engineer, previously held responsible positions with Dunham-Bush, Inc., most recent of which was chief product engineer.

Hussmann Announces New Line of Checkouts

ST. LOUIS — Hussmann Refrigeration, Inc., has announced a new line of single and double belt checkouts, incorporating 37 new design features.

New models are completely factory assembled, and shipped as a single complete unit ready for installation in the store. In addition to a new styled "closed-front" design, these checkouts also feature a new neoprene impregnated belt to resist smears and scratches, and a one-piece trim and rub rail now extends from front to rear.

A new gear reduction, chain-drive power belt system insures proper belt speed, and will not slip with heavy orders, it was stated. New low motor mounting also insures vibration-free operation, the company said.

BURN OUTS

A PROBLEM?

Not with

Schnacke

THERMATROL

Compressors!

Why expose your customer to the hazards of motor-compressor Burn-Outs that cause system contamination? Motor-compressor units are expensive. Wash-outs and chemical analyses are expensive and extended down-time is never pleasant.

ELIMINATE these hazards with *proven* open type, belt driven equipment that will match the load. Improved internal seals are no longer a problem making the rugged open type compressor a safer selection without all of the inherent dangers. Don't cut your Profits with call backs, install reliable husky compressors that will perform many years with minimum maintenance costs.

Proven in Actual Use for over 15 Years

•

IMPROVED for Modern Use

R-12 & R-22
5 H.P. to 75 H.P.

•

THERMATROL
Package Chillers
10 H.P. to 300 H.P.

Originators of the package chiller with single and multiple compressors serving highly satisfactorily since 1953.

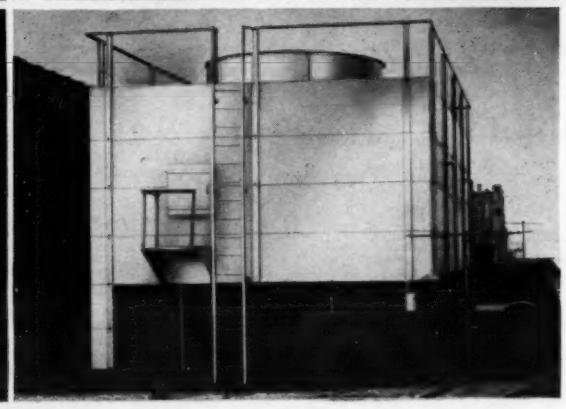
THERMATROL
Schnacke, Inc. Evansville 7, Ind.

Trade Headaches For P-R-O-F-I-T-S

YOUR food freezer customers phone you for "drop-everything-and-rush-over" de-frosting help! What do you do . . . and, what do you get? Just headaches! Now, you can sell and install (at a neat profit) a patented attachment that enables your customer to "dial" safe, lower temps; and get higher humidity and frost-free coils, GUARANTEED! This Control attachment easily pays for itself in safeguarding food quality and in saving shrinkage on perishables. 97 per cent of our sales is from "additional" units in supermarts, hotels, restaurants . . . it is that good. If you want "de-frosting" to make you money, write for "Bossman Details." Address: Bossman, 613 W. Washington, Chicago 6, Ill.

FIRST ONE IN 1955

ANOTHER IN 1960



The LaSalle Hotel, Chicago...

Saves $486.80 per day with Binks cooling towers!

"Without our Binks cooling towers our water bill would run $500 a day. As it is we pay only $13.20 per day for 86,000 gallons of makeup water . . . a savings of $486.80," reports Mr. J. E. Petermann, chief engineer of the LaSalle Hotel.

This 1000-room hotel now has two Binks 2-K cooling towers, one 2-fan unit installed in 1960 and a separate 1-fan tower which has been operating since 1955.

The new 2-K tower replaced a smaller Binks unit which had been in use for 23 years and was still operating perfectly when dismantled to make room for the new tower.

Two factors influenced the choice of another Binks tower . . . outstanding performance of the first two units and lower first cost of the new tower. Because Binks equipment is of modular design it is highly flexible. Expensive custom work or modifications were not necessary.

Free Specification Data

In 9 cases out of 10 a standard Binks cooling tower will meet your requirements exactly at a substantial saving. Write for mechanical and performance specifications.

Binks
EVERYTHING FOR WATER COOLING

A COMPLETE LINE OF NATURAL DRAFT AND MECHANICAL DRAFT COOLING TOWERS AND INDUSTRIAL SPRAY NOZZLES

Binks Manufacturing Company
3120-A Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

From the Files of the News

25 years ago . . .

Air conditioning systems and equipment ordered during August, 1936, from 98 manufacturers has been valued at $3,584,157, by the U. S. Bureau of the Census, a 13.6% drop from July orders.

Community refrigeration storage plants are gaining popularity in Idaho, with an estimated eight to ten thousand refrigeration lockers now available to Idaho farmers.

L. S. Harrison, assistant to the president of I.B.M., pointed out the alternatives facing America in foreign trade relationships—either cancel claims to a major part of its loans and investments abroad or permit freer access to its markets for foreign goods.

George Taubeneck reports on French NEMA activities in Paris, with specific emphasis on import restrictions on American electrical products; photographs accompanying the article showed crowds thronging the Annual Paris Exposition to see "modernistic refrigeration exhibits."

F. O. Jordan, in a serialized version of his book, **Air Conditioning Made Easy,** wrote this week of numerous factors which play important part in successful operation of air conditioning coils.

National Retail Furniture Association has launched an attack on "absurd" refrigerator guarantees and urges manufacturers to phrase their guarantees in language both the dealer and the customer can easily understand. NRFA wants a "definite agreement on the part of the manufacturer to operate under the warranty and to protect the retailer from any and all claims, costs, and so forth." It suggested that all around guarantees be limited to a period of one year.

Manufacturers of hermetically sealed units, however, said they believe the warranty can and should run for as long as five years.

10 years ago . . .

The Crosley Div., Avco Mfg. Corp., announced plans to add room air conditioners to its lines next spring, providing materials restrictions and shortages imposed by the Korean War do not upset the marketing schedule.

The Munitions Board Standards Agency has issued a letter explaining how it expects to standardize refrigeration condensing units for use by the military; **interchangeable** compressors, mounting dimensions, and compressor speed and range limitations were high on the list.

Eleven refrigeration and air conditioning firms were awarded "Highest Merit" citations for their 1950 stockholders reports by Weston Smith of "Financial World." They are American Air Filter, Carrier, Copeland, Fedders-Quigan, Hussmann, Servel, Tecumseh, The Trane Co., U. S. Thermo Control, Victor Products, and York.

Three Los Angeles firms have solved a humidity problem existing in the South Sea islands with their cooperatively designed 5-hp self-contained, air-cooled unit which, by removing excess moisture in the air, protects machinery and equipment from fungus and rapid deterioration.

The Holland-American Line's **S.S. Ryndam,** recently in New York after completing its maiden voyage, is the first ship of foreign construction to be completely air conditioned since the close of World War II, Carrier Corp. recently announced.

Picturesque Botsford Inn, which was built in Farmington, Mich. back in 1836, is equipped with Frigidaire window air conditioners to provide coolness without destroying the Inn's beauty and atmosphere.

Methods and equipment used to restore refrigeration to operating condition after the recent Kansas City flood disaster were offered in field notes taken by Westinghouse; interesting to note was the "on-the-spot" restoration treatment given refrigerated equipment too large to move to a repair shop.

I. R. Bean, vice president of the Bank of America, recently declared that the frozen food industry is a good loan risk and a "financially healthy industry," having overcome initial "overwhelming obstacles."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

MRS. DOWNS proudly looks on as Rod O'Flaherty (left) and Bill Polzer, representing the employes of Refrigeration Supplies, Inc., present James H. Downs with his 25th anniversary certificate.

Open House Marks 25th Anniversary For Refrigeration Supplies, Inc.

CLEVELAND — Sept. 15 marked the 25th year for Refrigeration Supplies, Inc., of Cleveland, Youngstown, and Akron, Ohio.

An open house lasting from 8 a.m. to 6 p.m. saw a continuous stream of over 500 dealer-contractors and servicemen visit at each of the three branches. Everyone filled out registration cards and Silver Anniversary gifts were presented at a drawing to a large number of winners.

James H. Downs, president, began his career in refrigeration as a serviceman after graduating from high school in Decatur, Ind. In 1923, his first job was with a Frigidaire distributor in Toledo.

In 1936, he moved to Cleveland as manager of the Starr Co. In the fall of 1936 he purchased Refrigeration Supplies, Inc., 4823 Superior Ave., Cleveland, and thus began his career in wholesaling.

Downs is active in many local and national organizations. He's a charter member of Refrigeration Service Engineers Society and is currently regional director of the American Society of Heating, Refrigerating & Air-Conditioning Engineers.

His employes presented him with a framed certificate commemorating his 25 years as owner of Refrigeration Supplies.

Dunham-Bush Names Buffalo Office Mgr.

WEST HARTFORD, Conn.—George T. Davis has been named office manager for the Buffalo sales office of Dunham-Bush, Inc.

He has served in various capacities for Dunham-Bush as product manager in West Hartford and as sales engineer in Philadelphia during the past ten years.

Minneapolis-Honeywell Appoints R. J. Looney

MINNEAPOLIS — Appointment of Richard J. Looney as manager of air cleaner sales for Minneapolis-Honeywell has been announced by John Haines, vice president of the firm's commercial division.

R. J. Looney

Looney will direct sales of all electronic air cleaners and activated charcoal filters for the company's Commercial Div., Haines said.

For the past four years, Looney has been in management positions on electronic temperature controls and air cleaners.

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118	.075	.125
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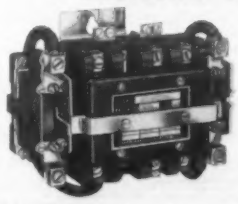

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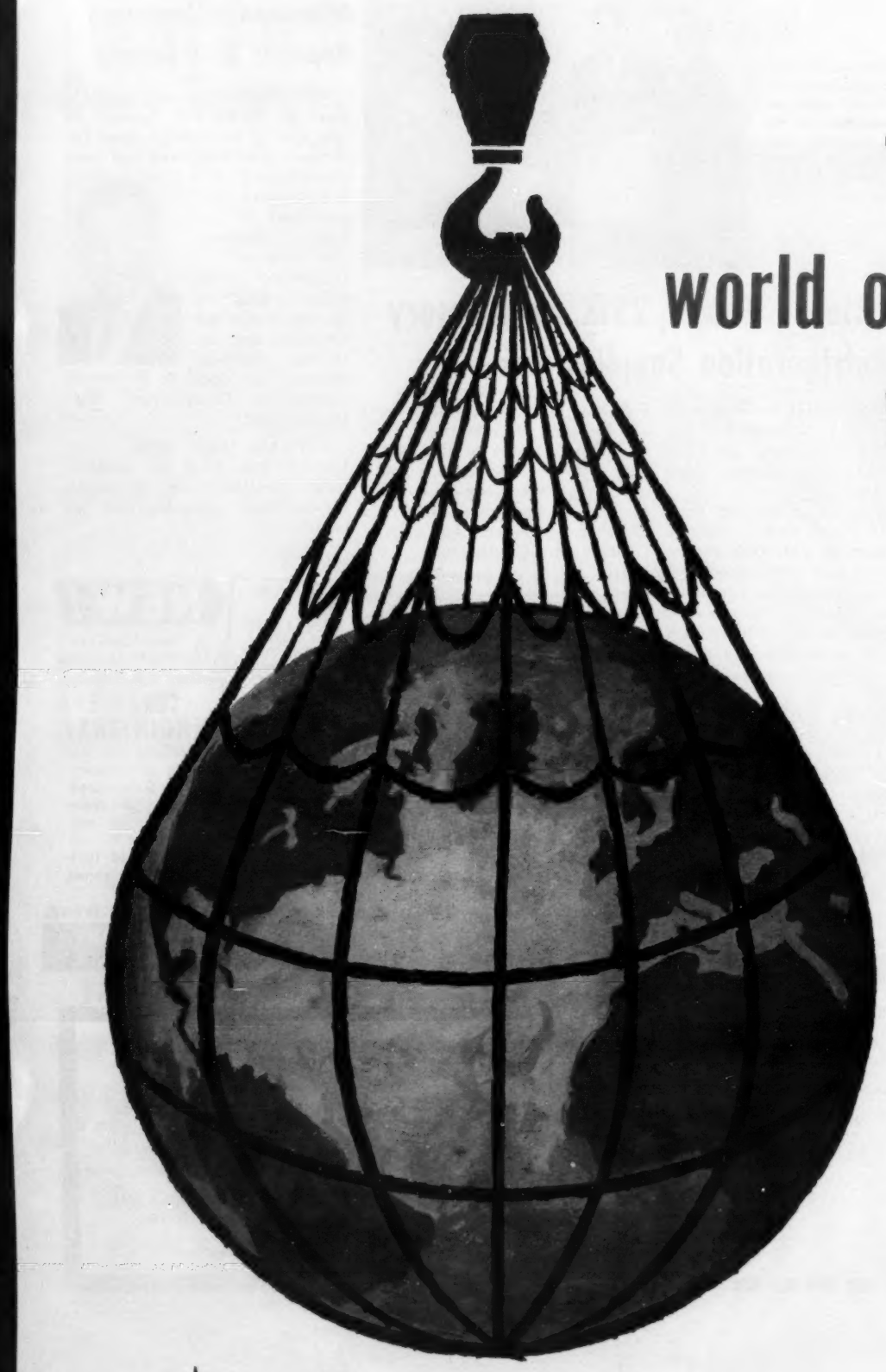

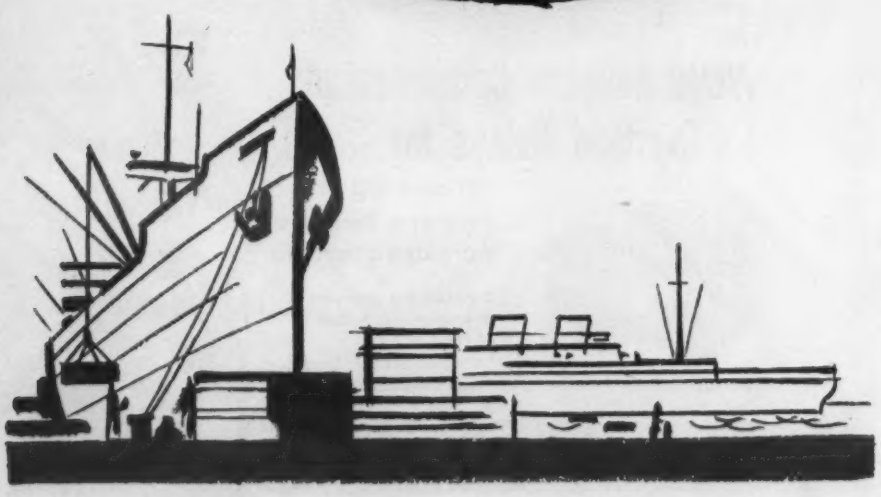

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December 18, 1961 issue
April 16, 1962 issue
December 17, 1962 issue

for special World Trade Emphasis, in addition to the annual

WORLD TRADE ISSUE
August 6, 1962

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CHICAGO, 134 S. LaSalle St., FRanklin 2-8643-4, Rex Smith
LOS ANGELES, 4710 Crenshaw Blvd., AXminster 2-9501, Justin Hannon
DETROIT, 450 W. Fort St., WOodward 2-0924, Al Schildhammer

AIR CONDITIONING
HEATING & REFRIGERATION
NEWS

The Newspaper of the Industry

RESIDENTIAL • COMMERCIAL • INDUSTRIAL

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Airtemp--

(Continued from Page 1, Col. 2)

The new products will augment an already-extensive Chrysler air conditioning line, which extends from room air conditioners through 700-ton centrifugal central station equipment, it was pointed out.

Airtemp claims original installation costs will be reduced as much as 10% on the model 1254 residential air conditioning system. This model consists of an evaporator coil, 24 ft of refrigerant tubing, and a condensing unit.

Installation Work Reduced

Installation work has been reduced to mounting the evaporator on the customer's furnace; drilling a 3-in. hole through an outside wall; uncoiling the refrigerant tubing from the evaporator case; and twisting the coupling on the end of the tubing to a coupling on the outside condensing unit, it was explained.

Chrysler engineers estimate that installation time will amount to four hours if the residence already has air conditioning ductwork.

The 1254 has a 35,000 capacity and is capable of air conditioning up to 2,000 sq ft, according to Airtemp.

The compressor in the 1254 condensing unit will have the deep probe motor guard. Another feature on the 1254 is all aluminum coils. "The replacement of copper tubing assures a reduction in corrosion and an improved mechanical bond between the coil and cooling fins," Airtemp said.

"The evaporator coil will fit any Chrysler coil case, and therefore any Chrysler furnace. The evaporator coil cases can be altered in the field to fit any non-Chrysler furnaces."

William P. Balthrop, president of Chrysler's Airtemp Div., said several factors influenced the decision to add electric furnaces to Chrysler's 1962 product line.

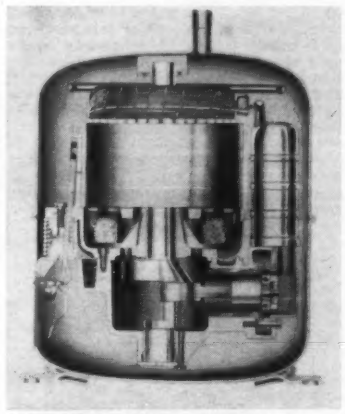
Tremendous Electric Heat Potential Seen

"Our marketing studies indicate a tremendous potential in electric heating sales," Balthrop stated. "Customers who now own electric heat are usually enthusiastic proponents in their neighborhoods and it definitely has an appeal to new home buyers and builders."

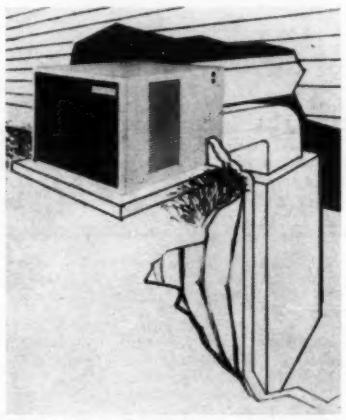
The furnaces are designed for horizontal, vertical, or counterflow operation, and they contain a three-speed, direct-drive blower. One of the unique features, according to Chrysler engineers, is a space designed for a "slide-in" cooling coil. The original blower and blower motor are adequate for the added cooling coil, it was stated.

The addition of a cooling coil transforms the furnace into the indoor section of a split system air conditioner or a heat pump. In the latter case the electric heat serves as auxiliary heat in the system. The location of the cooling coil upstream to the heating units insures the most efficient heat pump operation, Airtemp said.

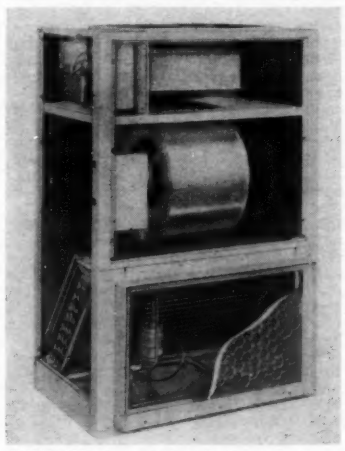
Exterior dimensions on both furnaces are identical. In a vertical position the furnaces are 29½ in. wide, 19½ in. deep, and 48⅛ in. high.



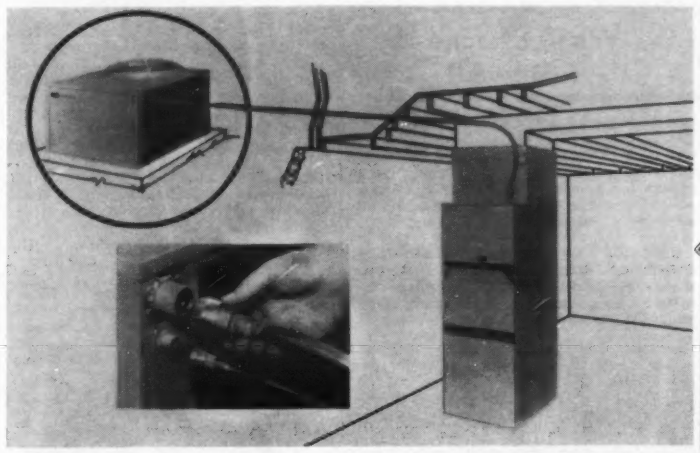
"DEEP PROBE MOTOR GUARD" is part of the motor's windings and senses excess heat. The probe element of the guard is buried in the windings and is attached to the control mechanism shown above on the right, between the windings and the muffler.



PACKAGED air conditioner model 1140.



CUTAWAY view of electric furnace shows, from top to bottom, the heating elements, the three-speed direct drive blower, and the optional "slide-in" air conditioning evaporator coil.



CHRYSLER model 1254 consists of a condensing unit (upper left); 24 ft of flexible refrigerant tubing; and an evaporator coil (atop furnace), pre-charged with refrigerant. The tubing fits through a 3-in. hole in the outside wall. Installation is completed when the suction and refrigerant lines (lower left) are attached to fittings on the condensing unit.

have been added to the compressor as safeguards against various faults.

"The new protector is much more senstive than these previous devices since it is wound into the heart of the motor and actually carries motor current.

"This deep probe sensitivity cuts the motor's current immediately when any unusual heating occurs. Internal contacts open to disconnect the motor when excessive heat begins. The motor guard automatically restarts the compressor when the excess heat disappears but again cuts off if overheating recurs. Four components have been eliminated with the introduction of the deep probe motor guard."

The 1140 whole-house air conditioner will consist of both the evaporator and condensing coils and the compressor. Air will be circulated through the conditioned space by the furnace fan.

T. W. Kirby, Chrysler Airtemp's vice president-marketing, said this unit "will give our distributors a budget-priced unit to interest builders and it gives our dealers a sales leader in the existing home market."

Main installation requirements for the 1140 will be supply and return air ducts between the unit and the furnace.

The one-piece unit has an outdoor grille and is constructed of zinc-coated, Bonderized steel to prevent corrosion. Chrysler's "maxi-fin" cooling and condensing coils are standard on the 1140 along with the "Power-Miser" compressor.

The all-in-one model 3103 heat pump has a 26,000 Btu heating and cooling capacity and it expands Chrysler's standard heat pump line to four models. The four models, two of them split system installations, range from 26,000 to 60,800 Btu in cooling capacities, and Chrysler has three other field conversion models.

"The 3103 is designed to operate in summer temperatures of 120°F and winter ambient air of 10°," it was pointed out.

"This model will fit almost any type of installation—roof, attic, basement, carport, or the ground. It can be flush mounted in an outside wall when exterior appearance is important.

"No louver appendages are required on the 3103 when it is flush mounted, since the air intake and discharge are located at the same end of the unit.

"Twin fan motors permit the continuous circulation of air throughout the conditioned space without the power consumption of the condenser fan.

"Chrysler has introduced a new condenser fan propeller and air passage arrangement which reduces sound from the outdoor fan and a re-location of the indoor fan substantially reduces indoor noise."

The model 1456 fan coil unit can be installed vertically, in either an upflow or downflow position; horizontally, from the ceiling or from a wall mount; and either indoors or outdoors. A unique feature is that the 1456 can be turned sideways and it will fit neatly into a standard closet; yet it can still be easily serviced, according to Airtemp.

Chrysler dealers will be able to use the fan coil unit with the 1200 series condensing units as a split system air conditioning installation, or it can be used as the indoor section of Chrysler's 3206 heat pump.

The 1456 can also be used in either a ducted installation, or as a free-blow installation. An electric heater section slides into the unit for conversion to an electric furnace or the unit's built-in plenum is useable for steam or hot water coils.

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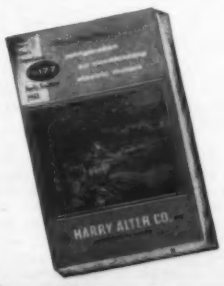

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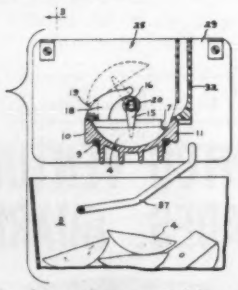
PATENTS

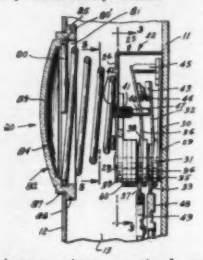
Week of June 13 (continued)

2,987,895. AUTOMATIC ICE MAKER. Henry J. Lowenthal, Louisville, Ky., assignor to General Electric Co., a corporation of New York.



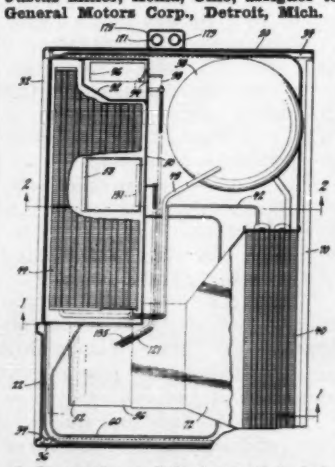
1. An ice maker comprising an ice mold having an interior wall of an arcuate contour and in which water is frozen into an ice piece, means for removing said ice piece from the mold comprising a finger having one end extending vertically into said mold below the water level therein whereby an ice piece formed in said mold adheres thereto, the other end of said finger being rotatably mounted above said mold for rotation of said one end of said finger and said ice piece about the center of curvature of said wall, bumper means positioned above said mold in the path of said ice piece for removing said ice piece from said finger, and means for heating said finger to loosen said ice piece before engagement of said ice piece with said bumper.

2,987,919. OVER TEMPERATURE CONTROL UNIT. Edward P. Kirby, North Hollywood, Calif., assignor, by mesne assignments, to General Controls Co., Glendale, Calif.



1. A temperature control unit comprising a temperature sensing means for sensing the temperature at a first surface, said sensing means having support means for locating said sensing means adjacent said first surface, a second surface spaced from said first surface and having an opening therein to permit passage of said sensing means and support means, closure means for said opening.

2,987,984. AIR CONDITIONER. Justus Miller, Xenia, Ohio, assignor to General Motors Corp., Detroit, Mich.

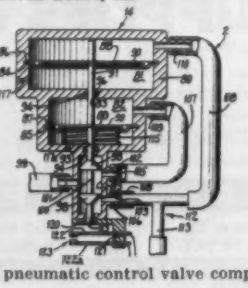


1. In an air conditioning unit including doors and door openings, a rotatable arm, a rotatable shaft carrying said arm, means for rotatably supporting said shaft, means for limiting the rotation of said arm about the axis of said shaft to provide two extreme positions and an intermediate position; said arm having an anchorage eccentrically located to said shaft, a first wire connecting said anchorage and a first door, a second wire connecting said anchorage and a second door. . . .

2,988,169. AIR FILTER. Joseph J. Klein, Glencoe, Ill., assignor to Fiber Bond Corp., a corporation of Illinois.

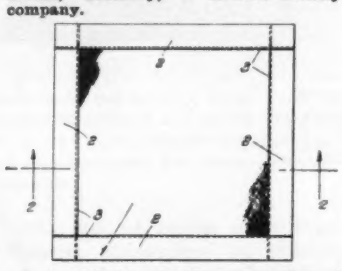
1. A self-sustaining, deformable filter comprising an adhesively bonded three-dimensional randomly arranged porous fibrous web adhered to a foraminated, self-sustaining deformable resin coated open cloth, the edges of said filter being bent to form a rim extending perpendicularly to the body portion of said filter, and a tape secured to said rim.

2,988,100. PNEUMATIC RELAY SYSTEM. Robert W. Couffer, Jr., Oak Park, Ill., assignor to The Dole Valve Co., Morton Grove, Ill.



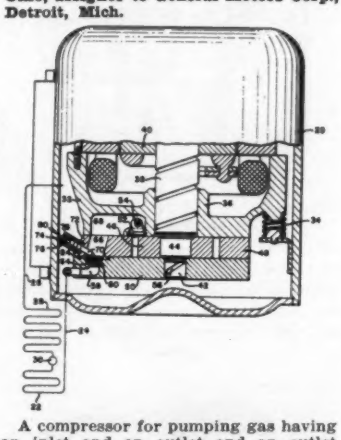
1. A pneumatic control valve comprising a valve body having first and second chambers and a cylinder formed therein in coaxial alignment with one another, a pair of outlets leading from said cylinder and spaced longitudinally along said cylinder, an inlet adapted to be connected to a source of pressurized air opening to said cylinder intermediate said outlets, movable wall members disposed within said chambers and peripherally sealed to the walls thereof, passages opening to said chambers so arranged that the direction of pressurized air thereinto will act to move said wall members in the same direction. . . .

2,988,168. AIR FILTER. Hans-Joachim Wittemeier, Berlin-Grunewald, and Fritz Becker, Berlin, Germany, assignors to Deibag-Luftfilter G.m.b.H., Berlin, Germany, a limited-liability company.



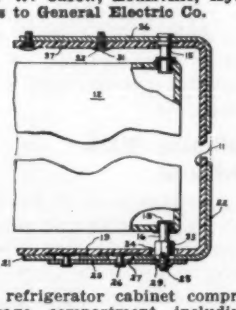
1. A washable air filter consisting of synthetic resin fibers having a thickness of 1 to 20 denier and lengths of 60 to 100 mm., wherein fibers produced from polyester resin are bonded to each other with a fiber-bonding agent to form a flat filter body, said fiber-bonding agent comprising saponified and subsequently highly acetalisized polyvinyl-acetate, which has been admixed with methylene-chloride.

2,988,263. REFRIGERATING APPARATUS. Thomas H. Fogt, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



A compressor for pumping gas having an inlet and an outlet and an outlet chamber, a wall dividing said inlet from said outlet chamber, a suction valve for preventing reverse flow through said inlet, a movable stop pin slidably mounted in said wall and movable variable amounts into the path of the opening movement of said valve, said stop pin being exposed on opposite ends to said outlet and inlet pressures providing a force varying with the difference in pressures for causing slidable movement thereof, spring means acting upon said pin for counteracting the preponderant force of the outlet pressure thereon and to vary the position of the pin in accordance with the difference between the outlet and inlet pressures. . . .

2,988,414. ADJUSTABLE FREEZER DOOR MOUNT. William P. Crowe and Arthur W. Carew, Louisville, Ky., assignors to General Electric Co.



1. A refrigerator cabinet comprising a storage compartment including a frame defining an access opening to said compartment, said frame compris-

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☐ New Master Service Manual—$1.50

☐ 1961 ASHRAE Guide and Data Book—$12.50

☐ Plant & Process Ventilation—$9

☐ Principles of Refrigeration—$12

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SERVICE MANAGER. National company seeking young, progressive customer-oriented man with management organization and systems abilities. Background in fractional horsepower compressors and/or controls and valves desired but not necessary. This is a new position. Northeast location. Send resume and salary desired. BOX A6897, Air Conditioning, Heating & Refrigeration News.

PRODUCT AND application engineer: National company seeking man with experience in application and/or product design engineering for air conditioning and refrigeration controls and valves and/or fractional h.p. hermetic compressors. New position with growth potential. Northeast location. Send resume and salary desired. BOX A6900, Air Conditioning, Heating & Refrigeration News.

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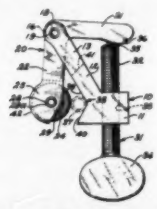
ing a face portion surrounding said access opening and forwardly extending flange portion surrounding said face portion, a door for closing said access opening, pivot pins respectively supported on the top and bottom sections of said flange portion and pivotally engaging the upper and lower edges of said door, and means for adjustably mounting at least one of said pivot pins on said frame comprising a support member having one face contacting the outer surface of one of said sections and having a pivot pin receiving slot therein. . . .

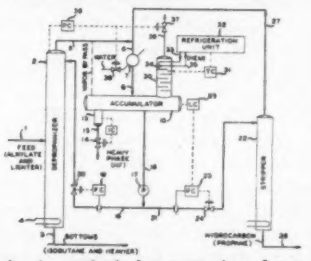
Week of June 20

2,968,814. TUBE CUTTER. Robert H. Carpenter, Fort Wayne, Ind., assignor to The Weatherhead Co., Cleveland, Ohio.



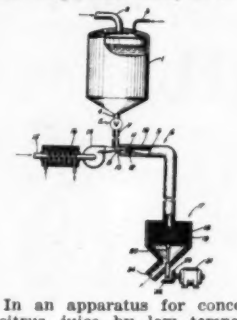
1. A tube cutter comprising a frame having a body portion and a leg extending outward from said body portion, a lever having angularly disposed arms pivotally mounted intermediate said arms on said leg, tube carrier means on said body portion, a screw in threaded engagement with said body portion adjacent said tube carrier means, a cutter wheel rotatably journalled on one arm of said lever, the other arm of said lever being engageable by said screw whereby movement of said screw in one direction rotates said lever about said pivot to move said cutter wheel toward said tube carrier means and toward said screw.

2,968,894. FRACTIONATION OPERATION. Joe Van Pool and Howard R. Sharp, Bartlesville, Okla., assignors to Phillips Petroleum Co.



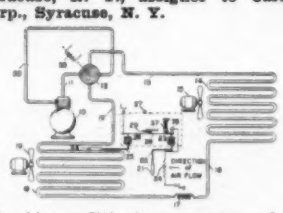
1. A method for removing from a fractionation system a gas or vapor which accumulates therein causing undesired rise in pressure and the constant venting of which results in a loss of a desired gas or vapor which comprises charging to a fractionating zone a feed to be fractionated therein, fractionating said feed to produce a bottoms product, which is withdrawn therefrom, and an overhead containing said desired gas or vapor, passing said overhead to a cooling zone, therein cooling said overhead, passing the thus overhead to an accumulation zone. . . .

2,968,895. PROCESS FOR LOW TEMPERATURE DEHYDRATION. Harry A. Toulmin, Jr., Dayton, Ohio, assignor, by mesne assignments, to Union Carbide Corp., New York, N. Y.



1. In an apparatus for concentrating citrus juice by low temperature dehydration, a tank for containing the citrus juice, a conduit connected to said tank and having a horizontal portion therein to enable the juice to flow through said conduit, a venturi tube in the horizontal portion of said conduit, a supply of inert refrigerant gas maintained at a temperature of approximately -10°F and sufficiently low to freeze the water in the citrus juice into ice crystals. . . .

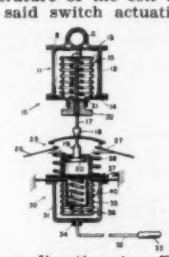
2,968,896. HEAT PUMP DEFROST CONTROL. Richard H. Swart, Jr., Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. Air conditioning apparatus of the type including a refrigeration system operable to selectively heat or cool air comprising a compressor having an inlet and an outlet, first and second heat exchange coils normally coupled to said compressor inlet and outlet, respectively, when said apparatus is used for heating, expansion means coupling said coils to each other, valve means coupled between said coils and said compressor for selectively causing said first and second coils to be coupled to said compressor outlet and inlet, respectively, in order to effect defrost of said second coil and defrost control mechanism effective to prevent premature termination of defrost and comprising a first thermal responsive system containing a temperature responsive fluid medium for producing a variable pressure representing a force within said system. . . .

2,968,897. DEFROST CONTROL FOR REFRIGERATION SYSTEMS. William L. McGrath, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.

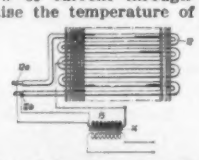
1. A defrost control for a frost accumulating coil in a refrigeration system including means for supplying heat to the coil to cause the defrost action and a circuit regulating operation of the heat supply means, comprising a switch in said circuit; switch actuating means; a first thermal unit, responsive to the temperature of the frost accumulating coil, connected to said switch actuating means, said unit being operable upon a decrease in the temperature of the coil to exert a force on said switch actuating mech-



anism in a direction to effect movement of the switch to cause the defrost action; a second thermal unit responsive to the temperature of the air flowing over the coil. . . .

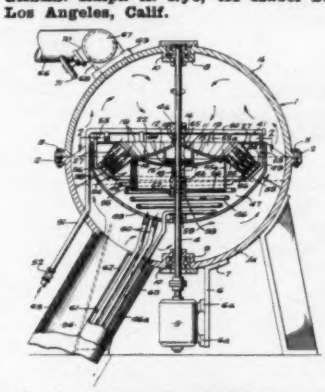
2,968,899. REFRIGERANT EVAPORATOR WITH DEFROSTING MEANS. Andrew George Heron, 20 The Grove, Benton, Newcastle-upon-Tyne, England.

1. An evaporator comprising a sinuous tube and metal cooling fins extending across the lengths of said tube for heat dissipation, the sinuous tube being connected to a source of electricity not exceeding 25 volts so that the flow of current through the tube will raise the temperature of the tube



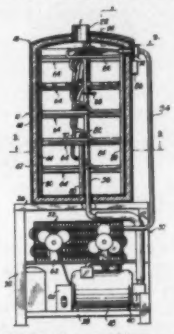
to effect defrosting thereof, wherein the tube is electrically but not thermally insulated from the fins, so as to prevent short circuiting of the sinuous conducting path provided by the tube, by an insulating film between the juncture of the evaporator tube and each fin which film comprises a hard flexible film of a synthetic resin of a thickness of the order of 0.003 of an inch and not exceeding 0.01 of an inch.

2,968,902. COMPRESSOR AND CONDENSER FOR AIR, VAPORS, OR GASES. Ralph A. Nye, 411 Isabel St., Los Angeles, Calif.



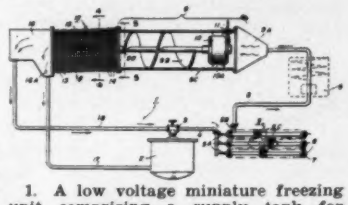
8. An improved centrifugal type compressor for compressing a fluid substance such as gas, vapor, or air, comprising a rotor, a vertical shaft carrying the rotor, fixed bearings for the shaft, a bank of compression pockets operatively connected to the rotor, a source of power for driving the rotor, a plurality of vanes mounted on the outer face of the wall of the perimeter of said rotor to cooperate with the compression pockets, said vanes disposed at a relative high angle of pitch with respect to a horizontal plane, said shaft and source of power operating to drive the rotor so that the linear speed of the vanes exceeds the supersonic limit of the fluid substance being compressed. . . .

2,968,900. COOLING UNIT FOR DRY CLEANING PLANT. Ernest R. Godfrey, Rogers, Ark., assignor to Rite-Temp Mfg. Co., Rogers, Ark.



1. Apparatus for cooling a liquid at an elevated temperature and as the same flows through a supply line, said apparatus including an elongated tank provided with an inlet and an outlet at substantially opposed ends thereof adapted to be coupled to respective lengths of said supply line to cause all of the liquid to have a flow path in one longitudinally extending direction through the tank from said inlet to said outlet; a refrigeration unit provided with a fluid coolant supply conduit and a coolant return pipe. . . .

2,968,903. LOW VOLTAGE MINIATURE FREEZING UNIT. James H. Bergman, 1102 Perry St., Defiance, Ohio.



1. A low voltage miniature freezing unit comprising a supply tank for housing liquid refrigerant, an evaporator unit mounted to communicate with said supply tank, means including a vane type pump compressor assembly mounted to induce a flow of saturated gas into and through said unit, condenser unit means connected to said last-mentioned means for partially condensing gaseous refrigerant and separating liquid and gaseous refrigerant, and return conduit means for conveying said liquid refrigerant to said supply tank.

(To Be Continued)

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

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NCRSA Meeting--

(Continued from Page 1, Col. 5)

chains and other customer groups, and the attitude of manufacturers on direct sales to groups who buy and finance new the purchase of equipment for new or remodeled stores of individual operators in such groups.

Improved Profit Picture Still Unsatisfactory

Also, while figures from the fine statistical effort directed by NCRSA Executive Secretary Marie H. Lawton revealed that sales of NCRSA members were up around 20% and net profits 25% in the first quarter, Greene said that the profit level for distributors was still unsatisfactory, and that the committee would explore possible means for improving the profit picture.

More attention was focused on the problem of direct sales to manufacturers by Walter McCarty, president, Refrigeration & Air Conditioning Contractors Assn. (RACCA National), a guest speaker at the convention.

"You might be surprised to find that we believe that most of our problems with manufacturers are our own fault," McCarty said. "We believe we are at fault because in the past we failed almost completely to establish any semblance of communication between the contractors as a group and the manufacturers. Now, we are doing everything possible to establish these lines of communication as an avenue on which to solve our mutual problems.

RACCA Resolution Cited

"At the RACCA national convention last year, a resolution was adopted which stated:

"That the practice of the manufacturer in attempting to sell both to the contractor and in direct competition with the contractor be condemned as against the public interest and against the interest of the industry, that RACCA make a full, fair, and complete investigation of each instance of this practice.

"A special reporting form is furnished to all of our members whereby they can report the direct sale by a manufacturer to the ultimate user. We have encouraged our members to complete these forms and return them to our national office. As complaints on any manufacturer are received, that manufacturer is contacted and a copy of the direct sale, as reported by our RACCA member, is sent to the manufacturer.

"We inquire of the manufacturer as to whether or not this is their policy—to sell direct—and the answers are almost 100% that 'it is not their policy' to sell direct to the users. But it seems in many instances, although this is the policy of top management, that the policy somewhere down through the chain of command was being broken, and that the policy of top management of many manufacturers was not being carried out on a local level."

McCarty said that the policy of getting written reports from RACCA members is progressing well, and that manufacturers have generally reacted well when the matter is placed before them. A pledge was made by one producer, McCarty said, to see that "any direct sales of the firm's products would be eliminated by the end of the year."

In sounding the convention theme, Dudley M. Cawthon, president, Dudley Cawthon, Inc., Miami, retiring NCRSA president, said that "profit is our obligation to provide for our families; profit is our obligation to provide for the support of our government; profit is our obligation to prove our belief in the American way of life, and most of all if we believe in the American way, profit is our obligation to provide and protect individual incentives and enterprise.

After describing "true profit as not something to be feared, because it works to the benefit of all," Cawthon described situations industry creates itself which may damage the profit picture in an industry and menace the free enterprise system. Cawthon listed these as—

—The manufacturer who has departed from his standard method of pricing or selling to gain temporary advantage, only to find he dragged his own profit margin down, as well as that of the industry.

—The distributor who through his greed desires to dominate his area through unethical practices and the reduction of prices in his effort to eliminate a competitor; eventually he finds that his competition becomes stronger, with the result that his profit is reduced or eliminated.

—The supplies wholesaler who goes directly to the large buyer, by-passing the distributor and contractor. He invites competition and loses his distributor and contractor accounts. The result is loss of profit.

Also touching on the matter of profits was Thom Muir, executive vice president of the Air Conditioning & Refrigeration Wholesalers association, who declared that the most common problem is the decline in profitability at all levels.

"This was not always the case," Muir said. "What has happened to bring this about?"

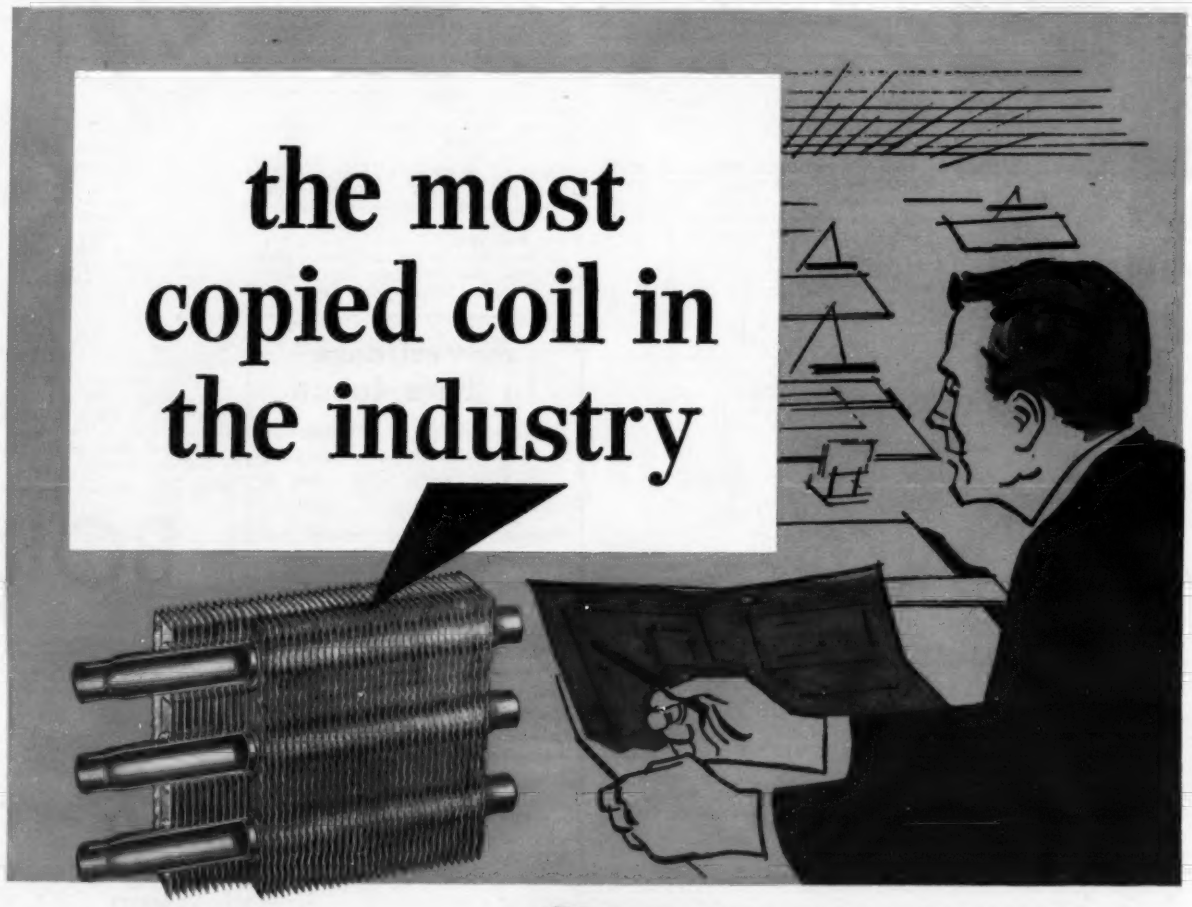
As Muir sees it, one possible cause was the introduction of new distribution factors into the field, brought about by the expansion of the air conditioning business. These new elements often did not understand the patterns of distribution and the profit patterns which were necessary for the continued growth and success of those who would sell, engineer, install, and service equipment in the field.

"You as a dealer and installer of such equipment have an obligation to make a success of your endeavors. At the same time I believe you have an obligation to support the manufacturers and supplies wholesalers who have helped you and who have helped to build the industry, and to turn away from the fly-by-night operators.

"The question should not be 'Who Does What to Whom' but 'Who Does What For Whom.' We in the ARW stand ready to bring out into the open the things that are gnawing on the vital elements in this business."

In a seminar sessions the commercial distributors discussed such things as "Financing as a Source of Profit," "Make Your Service Department a Source of Profit," "Reducing Overhead as a Source of Profit," and "Diversification as a Source of Profit." *(These will be reported in future issues.)*

NCRSA continues to grow, Miss Lawton reported, showing an increase of about 15% in new distributor members in the past year. Increased interest is also being shown in membership by firms outside the U.S., and the board of directors has under consideration a proposal to admit to memberships licensees of U.S. manufacturers.



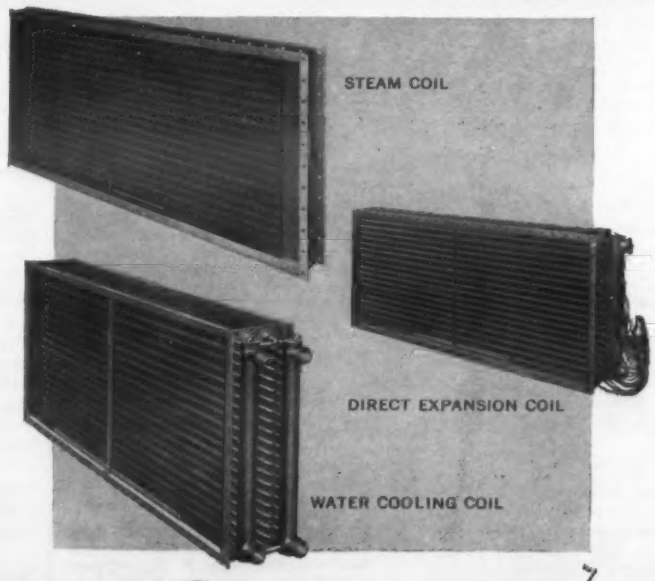
Over the years, McQuay coils have stood the important test of time, and have justly earned their reputation for quality and performance. No wonder, then, that they are the most copied coils in the industry.

McQuay was the first to produce a permanent Ripple-Fin-to-tube bond without the use of solder. McQuay was first with Ripple-Fins, first to combine Ripple-Fins and staggered tube construction for maximum heat transfer, greater strength and rigidity. McQuay, also, was first to add full fin collars to its Ripple-Fin construction for accurate fin spacing and maximum heat transfer.

McQuay coils are available in the widest possible range of styles and capacities and are available for steam, hot water, chilled water, direct expansion, refrigerant condensing and all types of brine. For any coil requirement, call your McQuay representative, or write McQuay, Inc., 1607 Broadway Street N. E., Minneapolis 13, Minnesota.

Tube diameters ⅝"—½"—⅜"
One to 12 rows deep—One to 15 fins per inch

McQuay Means Quality



McQuay INC.
AIR CONDITIONING • HEATING • REFRIGERATION